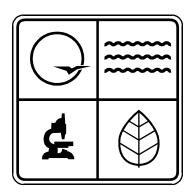
MISSOURI WATER QUALITY REPORT (SECTION 305(b) REPORT)

2012

MISSOURI DEPARTMENT OF NATURAL RESOURCES



WATER PROTECTION PROGRAM

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CHAPTER 1. EXECUTIVE SUMMARY

The Missouri Water Quality Report is published every two years. The report summarizes water quality issues and judges the degree of progress Missouri has made toward meeting Federal Clean Water Act goals. The water quality assessments made in this report will help direct future water quality management efforts to those waters most in need of restoration or protection.

WATER RESOURCES AND PROBLEMS

Missouri has an area of almost 69,000 square miles and a population of 6.0 million people, according to the 2010 census. Nearly half of the population is concentrated on opposite sides of the state in the Kansas City and St. Louis metro areas, leaving most of the state and its waters rural in nature. Surface and groundwater in Missouri are quite varied in quantity and quality, corresponding closely with geology and land use.

Northern and Western Missouri

Northern and western Missouri, originally prairie land, are now used primarily for crop and livestock production and are underlain by bedrock containing several relatively impermeable shale and clay layers. Surface waters are more turbid and are greatly affected by high rates of sediment deposition. These deposits, caused by soil erosion, result in poor aquatic habitat due to the fine, unstable materials of stream bottoms. Up to 8,000 miles of classified streams may be affected by these processes or other types of degradation of aquatic habitat, such as flow modification or channelization.

Rivers and reservoirs used as drinking water supplies often contain herbicides. In the recent past, several reservoirs that served as public drinking water reservoirs exceeded drinking water standards for atrazine or health advisory levels for cyanazine. Currently, however, there are no actively used drinking water reservoirs for which atrazine or cyanazine exceed these levels. This is due in part to local watershed management programs aimed at reducing herbicide runoff. Several other herbicides are occasionally found in drinking water reservoirs, also at concentrations below health advisory levels.

The quality of groundwater in northern and western Missouri is also influenced by the geology of the area. Public water supply sources include reservoirs and wells. The wells obtain water primarily from glacial drift deposits in portions of north-central and western Missouri. Wells in western Missouri, south of Kansas City, obtain water from limestone aquifers, except for the extreme western limits of Missouri, near the state border with Kansas. Private water supplies are obtained from glacial drift deposits and from underlying limestone bedrock in portions of northwestern, central, eastern, and northeastern Missouri. However, deep bedrock wells in many north-central and northwestern Missouri locations tap water supplies too mineralized for drinking water purposes. It is believed that a minority of private wells in this part of Missouri may exceed the drinking water standard for nitrate, and a very small number for pesticides. This contamination is often caused by localized surface contamination of the wellhead and does not represent widespread contamination of the underground aquifer. Deeper aquifers are well protected from surface contamination by impermeable strata.

The Ozark Plateau

The Ozark Plateau, including the Springfield Plateau, consists of predominantly hilly topography. There are some very rugged portions, as well as significant areas of gentle to almost flat landscape. The bedrock, consisting of limestone, dolomite, and sandstone, yields groundwater of excellent quality, generally requiring no treatment and adequate in supply for most urban, industrial, and other needs. The soil or subsoil has developed by weathering from the bedrock formations and is generally 20 to 80 feet thick.

Some areas have extremely thin soils, and other locations where weathering has been extensive have a thickness of 100 feet and more. The subsoil has moderate to high infiltration rates, which contribute to the recharge of groundwater supplies. Ozark streams are generally clear, with baseflows well sustained by

many seeps and springs. Some streams and reservoirs in the Ozarks are becoming nutrient and algae enriched due to increasing human population and domestic animal production in their watersheds.

Groundwater contamination risks are moderate to high due to the permeability of the soil and bedrock. Any number of surface activities, including agricultural and suburban-urban storm water and wastewater disposal, mining, storm water runoff, lawn care, improper well construction or closure, and individual onsite wastewater disposal practices, pose threats to surface water and groundwater quality. However, overall water quality remains good, due in large part to the efforts of all parties to protect the aquifers.

Groundwater is relied upon heavily for drinking water supply in this part of Missouri. Most municipalities in the southern half of the state rely on groundwater for drinking water supply. The number of private drinking water wells statewide is not known, but is probably between 100,000 and 250,000, mostly south of the Missouri River. The major groundwater concern is the often rapid and unfiltered transmission of contaminated surface runoff or leachate from some septic tanks, underground storage tanks, landfills, dumps, and liquid waste storage ponds, and animal production or processing wastes through fractures or sinkholes directly into potable aquifers. Properly cased wells into deep aquifers rarely encounter water quality problems, but shallow or improperly cased wells are at risk.

In the Joplin area, the shallow bedrock aquifer contains elevated levels of sulfate and several heavy metals due to mineralization of groundwater in flooded mines. Some private wells in this area exceed drinking water standards for lead or cadmium. Localized contamination of shallow private wells due to leaks, spills and improper disposal of industrial or commercial chemicals occurs in the larger metro areas of Springfield and Joplin.

The Mississippi Embayment

Missouri's southeastern corner is a large alluvial plain of the Mississippi River. Originally a vast system of wetlands, it has been drained and almost entirely converted to crop production. Almost all surface waters in the area are drainage ditches and may not attain beneficial uses because of degradation of aquatic habitat due to channelization. Channelization creates a homogeneous, low quality aquatic habitat. Sloughing of the channel banks, which fills the channel bottoms, buries better habitat, and leaves unstable substrate, is a problem.

Groundwater is abundant due to high infiltration rates on these flat fields. Public water supplies that tap deeper aquifers provide good quality water, but shallow private wells commonly have nitrates and low levels of pesticides. The frequency of exceedence of drinking water standards for nitrates and pesticides in private wells would be roughly similar to that in northern Missouri.

Alluvial Aquifers

The remaining major aquifer is the alluvial aquifer system of the major rivers of the state. In northern Missouri, where surface and deep aquifer supplies are unreliable, many towns depend on the alluvial aquifer of a large nearby stream. Landfills and industrial land use in Kansas City and St. Louis have historically been located on river floodplains and have caused local contamination of the Mississippi, Missouri and Meramec river aquifers in St. Louis and the Missouri River aquifer in Kansas City. Some municipal water supplies have been affected.

WATER POLLUTION CONTROL ACTIVITIES

Authority for enforcement of the Missouri Clean Water Law and for state regulations concerning water pollution resides with the Department of Natural Resources' Water Protection Program. Authority for the regulation of pesticide application rests with the Missouri Department of Agriculture. A permit from the Department of Natural Resources is not normally required to apply pesticides.

Point Source Controls

In order to legally discharge pollutants to waterways in Missouri, a party must obtain a National Pollutant Discharge Elimination System (NPDES) permit from the Department of Natural Resources. This permit sets limits on the amounts of certain pollutants that can be discharged. It may also set requirements for monitoring the effluent or the receiving stream.

The number of miles of classified streams judged to be impaired by point source wastewater discharges is somewhat greater than the estimate from 1984, when statewide data on stream quality first became available. In 1984, 105 miles of classified stream were judged to be impaired by domestic or industrial wastewater. Domestic and industrial discharges include wastewater from cities, subdivisions, apartment complexes, mobile home parks, businesses and industries. Stream miles impaired by point source discharges in more recent years were 101 miles in 2004, 83 miles in 2006, 70 miles in 2008, 170 miles in 2010, and 286 miles in 2012. The change in impaired mileage during the recent reporting cycles may be due in part to evolving data requirements and analytical methods, as prescribed by Missouri's 303(d) Listing Methodology. Also, water quality monitoring may be more appropriately targeted than it has been in the past, and the number of permitted point source discharges is likely higher than it was in 1984.

Hog and poultry production in concentrated animal feeding operations (CAFOs) are now major agribusinesses in Missouri. The large amount of animal waste generated at these facilities requires proper management to prevent water pollution. CAFOs are incorporated into the point source permit program, consistent with federal requirements.

Concern over eutrophication of large, recreationally important reservoirs led to changes in the state regulations for discharges of wastewater. These regulations impose phosphorus concentration limits on most wastewater discharges in the Table Rock Lake and Lake Taneycomo watersheds. These limits may be further affected as numeric nutrient criteria for lakes are implemented.

Nonpoint Source Controls

In recent years, several different types of nonpoint sources of pollution have come under regulatory control through a permitting process. Regulations are in place to prevent leakage from underground storage tanks and for the secondary containment of bulk agricultural chemical storage sites. Large sand and gravel mining operations require a general permit for storm water and smaller operations have been provided with guidelines for best management practices (BMPs), in addition to the 404 permit required of all sand and gravel operations. Storm water runoff discharge permits are issued for construction sites and other areas with more than one acre of bared ground. About 50 percent of all permits now issued by the Water Pollution Control Branch are storm water permits on land disturbance activities. Active mining areas that discharge water must operate under permits, although many abandoned mine lands still rely on voluntary controls. Many cities and large towns must now obtain storm water permits in order to manage pollution due to urban runoff.

Control of many agricultural nonpoint sources, such as erosion from cropland and pasture, or runoff of fertilizer, pesticides and animal waste, is addressed by Missouri's voluntary nonpoint source management program. This program works with federal, state and local governments, universities, private groups, and individual landowners to implement watershed projects that employ nonpoint source control practices and often monitor water quality results. Local watershed projects have resulted in significant reductions of atrazine levels in targeted drinking water reservoirs, in certain cases bringing them into compliance with water quality standards.

Programs with dedicated funding sources have worked best. A tax on coal has funded reclamation of abandoned coal-mined lands nationwide. Twenty-tfour years of such reclamation in Missouri has reduced the number of stream miles impaired by abandoned coal mine drainage from about 100 to about eight miles. A state sales tax for soil erosion control started providing funds for watershed level soil erosion control programs in 1985. This program, coupled with federal soil conservation programs, is reducing soil erosion in Missouri, based on the findings of periodic USDA National Resource Inventories.

Total Maximum Daily Loads

If a water body is deemed impaired by a pollutant, and it is determined that sufficient controls are not currently in place to protect water quality, it is placed on Missouri's Section 303(d) List. At this point, the Department is required to propose some form of additional pollution control that will restore the water to full attainment of the impaired use. This usually takes the form of a Total Maximum Daily Load, or TMDL. A TMDL is a document that includes a calculation of the amount of a specific pollutant a water body can absorb and still meet water quality standards. It also includes a plan to implement that limit, broken down into allocations from specific sources. Since 1999, DNR and EPA have established and implemented over 140 TMDLs and permits in lieu of TMDLs (PILOs). The current list of waters required to have TMDLs written, with the scheduled year of completion, can be found in Table 17 in Appendix 2.

COSTS AND BENEFITS

The economic costs of wastewater treatment and nonpoint source management are extremely diffuse and difficult to calculate. The total operating costs of municipal, private, and industrial treatment plants are not readily available. Likewise, it is difficult to estimate total expenditures on nonpoint source management. The amounts that the State of Missouri spends on various aspects of water pollution control and prevention, however, may give some indication of the relative investments required.

The Missouri Department of Natural Resources annually spends about \$2.8 million on monitoring and analysis of ambient water and related media. Approximately \$3.7 million is spent on permit issuance annually and about \$8.6 million on other facets of water pollution control and administrative support. Another significant expense is grants aimed at the improvement of water quality. The department awards an average of \$4.0 million annually for projects to address nonpoint source pollution through the federal Section 319 grant funds and about \$200,000 for water quality planning projects. The department's Soil and Water Conservation Program distributes more than \$24 million each year directly to landowners to address agricultural nonpoint source pollution through the reduction of sediment and to conserve and protect the quality of water resources on agricultural land.

The economic benefits of improved water quality are even harder to quantify. Of all the money spent on water-based recreation and fishing in Missouri, it is nearly impossible to tell how much is dependent upon improved water quality. The same is true for the expense of drinking water treatment. But however great the economic benefits may be, the true benefits of clean water are high-quality recreation experiences, healthy and confident use of water resources, and a robust aquatic biological community.

SIGNIFICANT THREATS TO WATER QUALITY

- Throughout the state, continuing suburban development impacts streams in several ways. Shortening and culverting of channels leads to the direct loss of streams and riparian areas. The increase in impervious surface area in the surrounding watershed leads to unnatural hydrograph patterns, with lower baseflow and higher stormflow. The altered channel and higher peak flows can increase erosion, while the runoff from the impervious surface carries increased levels of sediment and various chemicals from the urban environment. Elevated nutrient levels or bacterial contamination is also likely if individual or community domestic sewage systems are not well maintained.
- It is believed that channelization may have caused aquatic habitat degradation in roughly 32 percent of Missouri's streams, mainly in the northern and western plains and the southeastern lowlands. Large channelization projects affecting many miles of stream are no longer occurring, but many short projects still occur and continue to reduce the number of miles of natural stream channels statewide. Streams that were channelized many years ago still provide poor aquatic habitat, and these streams still contribute to flooding, high water velocities, and stream bank erosion as they try to recreate their natural sinuosity.
- Eutrophication of large, recreationally important reservoirs continues to be a concern. Heavy residential development around portions of these reservoirs can threaten water quality in many

- small coves and shoreline areas. The large size of these lakes and rugged local topography make centralized collection and treatment systems for wastewater difficult. Recent imposition of phosphorus limits on most wastewater discharges to Table Rock Lake has improved conditions in the James River arm of the lake.
- Mercury levels in fish in Missouri appear to be generally stable in recent years. As monitoring of mercury in fish in various waters of the state continues, new waters with elevated levels may be found, but those waters that have been monitored for long periods have not shown significant recent shifts in mercury levels. Re-evaluation of human health risk factors for mercury has led the Missouri Department of Health and Senior Services to issue an advisory regarding fish consumption among children 12 years of age and under, pregnant women and women who may become pregnant. These people are advised to limit consumption of all fish caught in Missouri to one meal per week, and consumption of bass and walleye over 12 inches in length to one meal per month. For other aspects of the advisory, please refer to www.dhss.mo.gov/fishadvisory/.
- Abandoned lead-zinc mines and their tailings continue to impact waters decades after mining has
 ceased. Missouri's Superfund Program is addressing some of these concerns. But long-term
 impacts are expected to remain. Although new mineral extraction operations would be managed
 under state permits, areas of the state that are very sensitive to disruption are being investigated for
 mining potential.
- Additional groundwater protection measures are needed. Missouri now has in place programs that
 register and inspect underground storage tanks and oversee the cleanup of leaking underground
 storage tank sites, programs for wellhead protection, sealing of abandoned wells and closing of
 hazardous waste sites. A complete groundwater protection program would also include a
 groundwater monitoring network and educational programs for those involved in the application
 of farm chemicals, transporters of hazardous materials, and the general public.
- There are currently 473 Class I concentrated animal feeding operations (CAFOs) located in Missouri. These are operations containing at least 1,000 beef cattle, 2,500 large swine, or 100,000 broiler chickens. These facilities generate large amounts of animal manure and have the potential to cause serious water pollution problems. Commercial application of manure, often on fields at a great distance from its source, is also a growing trend within large-scale agriculture. The department is also concerned by cumulative impacts of numerous small animal production facilities. However, it is no longer issuing Letters of Approval for smaller facilities, meaning that they will be largely unregulated.
- Fish and invertebrates data indicate that many communities throughout the state are suffering from degraded quality of aquatic habitat. Physical alterations of the channel, alterations in stream flow patterns, degraded conditions in the riparian zone, and upland land use changes are all believed to be significant contributors to this problem.

SURFACE WATER SUMMARY

Table 1. Beneficial Use Support Status of Missouri Classified Waters.*

STATUS		STREAM MILES	%	LAKE ACRES	%
Assessed	Full Support of Uses	4,328.9	17.7	126,461	41.8
	Non-Support	5,441.3	22.3	69,739	23.0
Unassessed	Non-support Not Suspected	11,356.7	46.5	106,276	35.1
	Non-Support Suspected	3,304.1	13.5	391	0.1

Numbers in Table 1 updated June 15, 2010.

Full Support of Uses: Water quality meets the needs of all uses that Missouri recognizes for a particular water body, such as protection of fish and other aquatic life (the water quality does not interfere with the ability of aquatic life to live, feed and reproduce), livestock and wildlife watering (the water will not cause disease or injury to livestock and wildlife using the water for drinking), drinking water supply (the water meets all state and federal standards as a drinking water supply source water), swimming (the water will not cause disease or injury to swimmers or others

participating in water-based recreation who may accidentally swallow small amounts of water), irrigation (the water will not cause disease or injury to crops), industrial water supply (the water will not cause excessive problems with corrosivity or mineral deposits in industrial piping and boilers), fish consumption (fish are safe to eat) and boating and canoeing.

- Non-Support: Water quality is seriously affected to the point that at least one recognized use of the water body has been lost. These impairments are documented by data that meets the requirements of Missouri's 303(d) Listing Methodology.
- Non-Support Not Suspected: There is inadequate information to make a water quality assessment of these waters, and the department knows of no data or information that would indicate a possible impairment.
- Non-Support Suspected: These are waters for which some data or observations exist indicating that one or more designated uses may not be supported, but the data are not of sufficient quantity or quality to officially rate the water as impaired. The bulk of these waters are streams in the plains areas of the state, where nearly all streams have been affected or modified by agriculture.
- * There are 24,431.0 miles of classified streams (permanently flowing streams or streams which maintain permanent pools during dry weather) and approximately 30,000 miles of unclassified streams (streams which are without water during dry weather). There are 302,867 surface acres of classified lakes. The number of surface acres of small unclassified lakes has not been estimated.

Table 2. Individual Use Support Summary for Classified Waters.

BENEFICIAL USE	SIZE ASSESSED	FULL SUPPORT	NON- SUPPORT	NOT ASSESSED	USE NOT APPLICABLE
STREAMS: MILES *	9,984.7	4,543.4	5,441.3	14,446.3	0
(PERCENTAGE)	(40.9%)	(18.6%)	(22.3%)	(59.1%)	(0.0%)
(TERCEIVITIGE)	(10.570)	(10.070)	(22.370)	(37.170)	(0.070)
AQUATIC LIFE AND	9,577.8	6,083.3	3,494.5	14,853.2	0
FISH CONSUMPTION	(39.2%)	(24.9%)	(14.3%)	(60.8%)	(0.0%)
SWIMMING	4438.5	1,918.0	2,520.5	19,560.2	432.3
	(18.2%)	(7.9%)	(10.3%)	(80.1%)	(1.8%)
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DRINKING WATER	1,337.5	1,337.5	0	2,073.0	21,020.5
	(5.5%)	(5.5%)	(0.0%)	(8.5%)	(86.0%)
LAKES: ACRES*	196,200	126,461	69,739	106,667	0
(PERCENTAGE)	(64.8%)	(41.8%)	(23.0%)	(35.2%)	(0.0%)
AQUATIC LIFE AND	212,414	144,803	67,611	90,453	0
FISH CONSUMPTION	(70.1%)	(47.8%)	(22.3%)	(29.9%)	(0.0%)
SWIMMING	221,340	221,340	0	81,527	0
	(73.1%)	(73.1%)	(0.0%)	(26.9%)	(0.0%)
DRINKING WATER	23,886	23,877	9	109,806	169,175
	(7.9%)	(7.9%)	(0.0%)	(36.3%)	(55.9%)
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^{*}The mileages and acreages for overall use support are more approximate than those for the individual uses, and may overestimate the streams and lakes that are not supporting uses. This is clear in the case of lakes, where Aquatic Life and Fish Consumption is the only use being impaired, and yet the overall use shows a slightly higher rate of impairment.

Table 3. Major Water Pollution Sources in Missouri Classified Waters. (Stream Miles or Lake Acres Impaired)

Source	Stream Miles Impaired	Percent of Total Miles	Lake Acres Impaired	Percent of Total Acres
Unknown	2,006.4	8%	1,740	1%
Agriculture	1,088.1	4%	640	*
Grazing Activities	55.8	*		
Crop Production			9	*
Urban Runoff and Construction	1,031.8	4%	49,055	16%
Atmospheric Deposition	703.6	3%	24,560	8%
Mining	541.5	2%		
Tailings	515.7	2%		
Other Mining Activities	25.8	*		
Municipal and Other Domestic Point	324.1	1%	48,434	16%
Sources				
Hydromodification	105.9	*	246	*
Channelization	66.4	*		
Flow Regulation/Modification	29.0	*		
Upstream Impoundment	10.5	*	246	*
Industrial Point Sources	41.8	*		
Rural Nonpoint Sources	14.8	*	206	
Natural Sources	2.3	*		
Recreational Activities	7.5	*		-

^{*}Less than 1 percent

Table 4. Major Contaminants in Missouri Classified Waters.

Contaminant	Stream Miles Impaired	Percent of Total Miles	Lake Acres Impaired	Percent of Total Acres
Bacteria	2,945.0	12%		
Metals			24,560	8%
Mercury	695.8	3%	24,560	8%
Lead	249.4	1%		
Cadmium	142.9	1%		
Zinc	126.7	1%		
Nickel	10.7	*		
Copper	5.7	*		
Arsenic	0.9	*		
Low D.O.	914.0	4%		
Unknown	445.3	2%		
D.O. Supersaturation	73.0	*	246	*
Chloride	65.8	*		
рН	43.0	*		

Sediment Deposition	36.1	*		
Thermal Modification	33.9	*		
Sulfate	20.0	*		
Ammonia	17.7	*		
Pesticides	11.3	*	9	*
Nutrients	4.9	*	100,066	33%
Chlorophyll			49,757	16%
Nitrogen			49,307	16%
Phosphorus			854	*

^{*}Less than 1 percent

Note: Many stream miles in Missouri are affected by more than one pollution source or pollutant; therefore, total miles/acres in Tables 3 and 4 can exceed miles/acres in Tables 1 and 2.

CHAPTER 2. MISSOURI AND ITS WATER RESOURCES

Missouri has an area of almost 69,000 square miles and a population of 6.0 million people. Nearly half of the population is concentrated along the border areas on opposite sides of the state in the Kansas City and St. Louis metropolitan areas. Population as well as industrial and commercial activity in major urban areas has remained relatively stable for the past few decades. Patterns of rural land use have changed greatly in some areas, particularly residential development around the larger cities, recreational development adjoining Lake Taneycomo and the eastern ends of Lake of the Ozarks and Table Rock Lake, and the increasing development of large concentrated animal feeding operations in north-central and southwestern Missouri.

Missouri has an extensive stream network that includes more than 22,000 miles of classified streams and more than 291,000 surface acres in its 459 classified lakes. Three distinct regions exist within the state's boundaries and the particular geology and land use of each affect water quality. These areas are a prairie region, which is rolling land predominantly used for row crops and pasture; the Ozarks, a hilly area that is mostly pasture and forest; and the Bootheel, a flat alluvial plain adjoining the Mississippi River in southeast Missouri, which is used mainly for row crop production.

Water Quality Standards

Missouri's Water Quality Standards (10 CSR 20-7.031) provide the names and locations of all classified streams and lakes. This state regulation defines more than 3,700 individual stream and river segments and 450 lakes, lists which beneficial uses are assigned to each of these waters, and defines the level of water quality necessary to meet each of these uses. This is done by setting specific levels of naturally occurring or anthropogenic chemicals, known as numeric criteria, which are not to be exceeded in the water. The department is in the process of revising its water quality standards to include numeric criteria for nutrients (total nitrogen, total phosphorus, and total chlorophyll) in lakes. When that process is complete, the department will also work to develop criteria for nutrients in streams.

The remaining waters of the state, such as those in the headwater areas that do not have permanently flowing or standing water, and a number of small lakes, are not listed in the Missouri Water Quality Standards and do not have beneficial uses assigned to them. These unclassified waters (as well as the classified waters) are protected by the general criteria in the Water Quality Standards. The general criteria say that these waters must be free from conditions harmful to livestock or aquatic life, as well as aesthetic problems such as demolition debris, trash, tires, odor, discoloration, or the presence of objectionable floating or deposited material. The department is currently seeking to promulgate a rule by which the distinction between classified and unclassified waters would effectively be eliminated and all waters of the state would be protected by numeric criteria.

Table 5 Missouri's Water Resources

Missouri Population (2010 census)	5,988,927
Surface Area (square miles)	68,742
Number of Four-Digit HUCs*	12
Number of Eight-Digit HUCs*	66
Number of Fourteen-Digit HUCs*	1,500
Classified Stream Miles	24,431.0
Unclassified Stream Miles	234,325.1**
Number of Classified Lakes	459
Total Classified Lake Surface Area (acres)	302,867
Freshwater Wetlands Area (acres)	113,012***

^{*}HUC (Hydrological Unit of Classification): A hierarchical system of watershed delineation, developed by USGS. The system describes scales ranging from major continental basins (two digits) to small local drainages (14 digits).

CHAPTER 3. SURFACE WATER ASSESSMENT

DESCRIPTION OF MISSOURI'S CURRENT WATER QUALITY MONITORING PROGRAM

Purpose

The major purposes of the water quality monitoring program are (1) to characterize background or reference water quality conditions; (2) to better understand daily, flow event and seasonal water quality variations and their underlying processes; (3) to characterize aquatic biological communities and habitats and to distinguish between the impacts of water chemistry and habitat quality; (4) to assess time trends in water quality; (5) to characterize local and regional impacts of point and nonpoint source discharges on water quality; (6) to check for compliance with water quality standards or wastewater permit limits; (7) to aid in developing TMDLs to prescribe acceptable limits of pollutants to be discharged; and (8) to support development of strategies to return impaired waters to compliance with water quality standards. All of these objectives are statewide in scope.

Coordination with Other Monitoring Efforts in Missouri

The department cooperates with other agencies in performing special water quality studies. In 1998, a multi-agency task force including the Missouri Department of Natural Resources, Missouri Department of Conservation (MDC), U.S. Environmental Protection Agency (USEPA), the U.S. Geological Survey (USGS), U.S. Forest Service (USFS), U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS), and University of Missouri convened to develop an outline of a statewide aquatic resources monitoring plan, define partnership roles in this monitoring plan and discuss the kind of research needed to further this new monitoring effort. The first major product of this work group was an agreement to initiate a cooperative statewide aquatic invertebrate and fish monitoring program by MDC and the Department of Natural Resources. In 2000, the Missouri Resource Assessment Monitoring (RAM) Program was created. The RAM program is a biological monitoring program that monitors fish and invertebrate communities in wadeable streams throughout the state. It is designed to sample across the entire state every five to six years. MDC has taken the lead, sampling more than 100 sites each year in various Ecological Drainage Units. Since it began, more than 1,300 fish samples and 600 invertebrate samples have been taken.

To maximize efficiency, the department routinely coordinates its monitoring activities to avoid overlap with other agencies and provide and receive interagency input on monitoring study design. Data from other

^{**}From the National Hydrography Dataset, published by the U.S. Geological Survey, 2008.

^{***}From the Land Cover project of the Missouri Resources Assessment Partnership.

sources is used for meeting the same objectives as department-sponsored monitoring. The agencies most often involved are USGS, USEPA, MDC, the U.S. Army Corps of Engineers (COE), the USDA Agricultural Research Service (ARS) and the Missouri Department of Health and Senior Services (MDHSS). However, the department also tracks the monitoring efforts of the National Park Service (NPS), USFS, several of the state's larger cities, the states of Arkansas, Kansas, Iowa, and Illinois, and graduate level research conducted at universities within Missouri. The department also uses monitoring data acquired by wastewater dischargers as a condition of discharge permits issued by the department. The department began using data collected by volunteers that have passed Quality Assurance and Quality Control (QA/QC) tests in 1995.

Networks and Programs

1. Fixed Station Network

- A. Objective: To better characterize background or reference water quality conditions, to better understand daily, flow event and seasonal water quality variations and their underlying processes, to assess time trends and to check for compliance with water quality standards.
- B. Design Methodology: Sites are chosen based on one of the following criteria:
 - Site is believed to have water quality representative of many neighboring streams of similar size due to similarity in watershed geology, hydrology and land use, and the absence of any impact from a local point or discrete nonpoint water pollution source.
 - Site is downstream of a significant point source or localized nonpoint source area
- C. Number of Sites, Sampling Methods, Sampling Frequency, Parameters:
 - USGS/DNR cooperative network: 71 sites statewide, horizontally and vertically integrated grab samples six to 12 times per year, analyzed for nutrients, temperature, pH, dissolved oxygen, percent saturation, specific conductance, flow, *E. coli*, fecal streptococci, and fecal coliform; trace metals, major ions and suspended solids two to twelve times annually at all sites; pesticides six times annually at four sites; and continuous water-quality monitors at two sites on the Missouri River.
 - DNR chemical monitoring of more than 45 sites two to 24 times per year for nutrients, major ions, flow, temperature, pH, dissolved oxygen and specific conductance.
 - UMC/DNR lake monitoring network: about 100 lakes monitored spring through fall for nutrients, chlorophyll, turbidity and suspended solids.
 - DNR routine monitoring of finished public drinking water supplies for bacteria and trace contaminants.
 - Routine bacterial monitoring of swimming beaches at Missouri state parks during the recreational season by the department's Division of State Parks.
 - Routine monitoring of sediment on 10 to 15 discretionary sites annually. All sites are monitored for several heavy metals and organic contaminants. A pore water sample is analyzed for ammonia and a Microtox toxicity test or similar toxicity screening test on the pore water or whole sediment sample is performed.

2. Intensive Surveys

- A. Objective: To characterize the water quality impacts from a specific pollutant source area.
- B. Design Methodology: Determination of contaminants of concern is based on previous water quality studies, effluent sampling, and/or NPDES permit applications. Multiple sampling stations upstream and downstream will be used, if appropriate. If contaminants of concern have significant seasonal or daily variation, season of the year and time of day

- must be accounted for in the sampling design. These studies would also require multiple samples per site over a relatively short time frame (e.g., 2 to 4 visits over a 2 to 3 day period or 10 to 15 visits over a 2 to 3 year period).
- C. Number of Sites, Sampling Methods, Sampling Frequency, Parameters: The Missouri Department of Natural Resources conducts or contracts for 10 to 15 special studies annually. Each study has multiple sampling sites. Number of sites, sampling frequency and parameters vary greatly depending on the study.

3. Toxics Monitoring Program

Monitoring of toxics is not a separable part of the monitoring program. The fixed station network and many of our intensive studies monitor for toxic chemicals. In addition, major municipal and industrial dischargers must monitor for toxicity in their effluents as a condition of their NPDES permits.

4. Biological Monitoring Program

The Missouri Department of Natural Resources has developed a monitoring program for aquatic invertebrates that is proving very useful for characterizing the health of aquatic biological communities in Missouri. Forty-five reference streams were identified across the state during the 1990s and were used to develop criteria describing reference communities of macroinvertebrates for different ecological regions. More than 50 stream sites are sampled annually, generally chosen to support the formation of the 303(d) list and the creation of TMDLs. Sampling results and data analysis are available from a central database. A long-term objective of the program is to establish a fixed statewide network of biological monitoring stations in order to monitor large-scale trends. Fish sampling must also be a part of an effective long-term biological monitoring program.

The department contracted with the U.S. Geological Survey in 2001 to conduct a study of aquatic invertebrate communities on the Missouri River. The study, *Validation of Aquatic Macroinvertebrate Community Endpoints for Assessment of Biological Condition in the Lower Missouri River*, was published in 2005. The department sees this work as the first of several steps by which it will promote a better understanding of fish and invertebrate communities of large rivers, and ultimately the development of biological criteria for the Missouri and Mississippi rivers.

5. Fish Tissue

- A. Objective: Fish tissue monitoring can address two separate objectives. These are (1) the assessment of ecological health or the health of aquatic biota, and (2) the assessment of human health risk based on the level of contamination of fish fillets.
- B. Design Methodology: Sites were chosen based on one of the following criteria:
 - Site is believed to have water and sediment quality representative of many neighboring streams of similar size due to similarity in geology, hydrology and land use, and the absence of any known impact from a local point source or discrete nonpoint water pollution source.
 - Site is downstream of a significant point source or localized nonpoint source area.
- C. Number of Sites, Sampling Methods, Sampling Frequency, Parameters: The department and USEPA have a cooperative fish tissue monitoring program that collects whole fish composite samples at approximately 13 fixed sites once every two years. The preferred species for these sites are either carp or redhorse sucker. About 25 discretionary sites are also sampled annually for two fish composite samples. One sample is of a top carnivore fish such as largemouth bass, smallmouth bass, walleye or sauger. The other sample is for a species of a lower trophic order such as catfish, carp or sucker. The Missouri Department of Conservation is a partner in this portion of the program. The Department of Natural Resources is now using fish tissue plug techniques to collect the predator

samples, by which a small portion of a live fish may be sampled, composited with others from the same site, and analyzed for mercury. Composite fillet samples are still collected from the lower trophic level fish.

In addition, MDC samples approximately 20 sites annually through its Fish Contaminant Monitoring Program, which began in 1984. Sites are coordinated with the Department of Natural Resources and the Department of Health and Senior Services and a wide variety of species are sampled. Both of these monitoring programs analyze for several chlorinated hydrocarbon insecticides, PCBs, lead, cadmium, mercury, and fat content.

Laboratory Analytical Support

Laboratories Used:

- USGS/DNR Cooperative Fixed Station Network: USGS Lab, Denver, Colorado
- DNR Public Drinking Water Reservoir Network: Missouri Department of Natural Resources Environmental Lab
- Intensive Surveys: varies; many are done by Missouri Department of Natural Resources Environmental Lab
- Toxicity Testing of Effluents: many commercial labs
- Biological Criteria for Aquatic Invertebrates: Missouri Department of Natural Resources Environmental Lab and University of Missouri, Columbia
- Fish Tissue: USEPA Region VII Lab, Kansas City, Kansas and USGS Columbia Environmental Research Center Lab (Missouri Department of Conservation)
- NPDES self-monitoring: commercial labs
- DNR Public Drinking Water Monitoring: Missouri Department of Natural Resources and commercial labs

Ouality Assurance/Ouality Control (OA/OC) Program

Missouri and Region 7 EPA have completed a Total Quality Management Plan. All environmental data generated directly by the department or through contracts funded by the department or EPA will require a quality assurance project plan (QAPP) following EPA's Guidance for Quality Assurance Project Plans (QA/G-5).

Data Storage and Management

The department retrieves raw data from the USGS database, NWIS, and numerous state, federal and municipal sources. This data is imported into the Missouri state computer system for storage and statistical analysis. The department maintains a good deal of water quality data in its WQA database. Data in this database comes from the department's own monitoring efforts and a wide array of other public and private sources.

Beginning in 1999, the department began linking many separate databases pertaining to water quality, other environmental data and information on regulated facilities via ACCESS software and importing this data into a GIS (ArcView) environment. The majority of the work has been completed, but new data that enters this process is received on a regular basis.

The Missouri Department of Natural Resources has developed a database that provides access to the raw data and analysis of all quantitative invertebrate sampling it has performed. This database is now available to the public online at www.dnr.mo.gov/env/esp/biologicalassessments.htm. Within the next few years, the Missouri Department of Conservation plans to have on-line access to its RAM database, as well as its fisheries and aquatic habitat database that contains community-level data. These databases are updated on an ongoing basis.

Training and Support of Volunteer Monitoring

Two volunteer monitoring programs are now generating water quality data in Missouri. The first is the Lakes of Missouri Volunteer Program (LMVP), a cooperative program between the Department of Natural Resources, the University of Missouri and volunteers who monitor lakes throughout Missouri, including Lake Taneycomo, Table Rock Lake, and several lakes in the Kansas City and St. Louis areas. In 2010, volunteers monitored 113 sites on 55 lakes. Data from this program is used by the university as part of a long-term study on the limnology of Midwestern reservoirs.

The second program involves volunteers who monitor water quality of streams throughout Missouri. The Volunteer Water Quality Monitoring Program is a cooperative project of the Department of Natural Resources, the Department of Conservation, and the Conservation Federation of Missouri and is a subset of the Missouri Stream Team Program. Since its inception in 1993, 8,487 citizens have attended 487 water quality monitoring workshops held by program staff across the state of Missouri. This has resulted in the submission of more than 19,872 separate data sheets at 5,453 Missouri stream sites. The volunteer hours spent in this endeavor total more than 430,004 hours, worth an approximate \$8,084,075.20 in added value to the state.

In fiscal year 2011, 190 new Stream Teams formed and in 2012, there were 115 new Stream Teams formed. The total number of Stream Teams has now reached 4,580. In 2011, a total of 215 citizens attended the Introductory class, while 240 attended the same workshop in 2012. After the Introductory workshop, many proceeded to attend at least one workshop for higher level training. In fiscal year 2011, 94 citizens attended the Level 1 workshops and 64 attended to date in fiscal year 2012. The number of attendees for Level 2 workshops in fiscal year 2011 and 2012 were 59 and 38 respectively. One volunteer passed the Level 3 audit in 2009, while 8 volunteers passed in 2010. In 2011 and 2012, the Level 3 and CSI certifications were suspended due to the poor health and untimely death of the staff member in charge of this part of the program. This effort will soon continue with a new staff member in place. Each level of training is a prerequisite for the next higher level, as is appropriate data submission. Levels 2, 3, 4 and CSI represent increasingly higher quality assurance and quality control stringency. Data submitted by volunteers of Level 2 or above may be used by the department to establish baselines of water quality for particular streams, or to point out potential problems that are in need of further investigation. Level 2 and higher volunteer monitors are required to return for a validation workshop at least every three years in order to ensure that their equipment and methods are up to date and that the data they are gathering has a high level of quality assurance. Twenty-six volunteers have received Cooperative Stream Investigation training as of July 2011. In 2011 and 2012 volunteers submitted 592 sets of macro invertebrate data, 1,176 sets of water chemistry data, 487 sets of visual survey data, 559 sets of stream discharge data, and 123 site selection data sheets. Wastewater and drinking water operators have also attend workshops in order to receive operator certification credits. To date, 184 operators have attended Stream Team training.

Data Interpretation and Communication

Missouri now uses the Internet-based WQA database for tracking and reporting water body use attainment information. An EPA contractor, RTI, completed geo-referencing of Missouri's classified waters in 1998. The stream and lake network of the state, water quality standards information, the locations of permitted wastewater discharges and other potential pollutant sources and information describing them can now all be viewed within a GIS (ArcView) environment. The department has developed an Interactive Map View and Query tool for public use that displays a variety of geographic information at www.dnr.mo.gov/internetmapviewer/.

The department has a variety of water quality information available on its Web site, www.dnr.mo.gov. Among other items, this information includes Missouri's Water Quality Standards, the Listing Methodology Document, the 305(b) Report and 303(d) List, TMDLs, and a queryable database of all of the department's electronic water quality data.

Sharing Data with the Public

Water quality data accessibility is easy. Contact the Water Protection Program for more information.

- 1. The Department's electronic water quality database is available to be searched online at dnr.mo.gov/mocwis_public/wqa/waterbodySearch.do. This includes data on not only water column quality, but sediment, fish tissue, and fish and invertebrate communities. The data has been collected by MDNR and many other agencies or organizations.
- 2. Requests for very general information on water quality may be made by calling 1-800-361-4827. They may be filled by the 305(b) Report, pamphlets or fact sheets. Much of this information, plus information on Missouri's 303(d) List and completed Total Maximum Daily Load (TMDL) studies, is also available on the Internet at www.dnr.mo.gov/env/wpp/wp-index.html.
- 3. More specific requests, or requests that are more extensive than can easily be accommodated by the online public database, may require the department to search published reports or water quality data files. If the report or data was generated by the department, it can be sent to the requestor through electronic mail or regular mail (a hard copy for small reports and data files, or compact disks for larger data files). Alternatively, the requestor may visit the department office at 1101 Riverside Dr. in Jefferson City and view the files directly. If the report or data file did not originate with the department, the request may be passed on to the organization that published the report or data.

Requests for more specific water quality information, or requests to view water quality data files, should be sent to:

Missouri Department of Natural Resources Water Protection Program ATTN: John Ford P.O. Box 176 Jefferson City, MO 65102-0176

Phone: (573)751-7024 Fax: (573)522-9920

E-mail: john.ford@dnr.mo.gov

Monitoring Program Evaluation

The water quality monitoring program within the department has traditionally focused on the chemical characterization of water quality in both those streams that are free of, and subject to, point source wastewater discharges. While the monitoring has been able to keep pace with our more critical point source assessment needs and has done a good job of characterizing regional water quality unimpaired by point source discharges, the size and scope of the department's monitoring has fallen far short of the state's information needs. The advent of large concentrated animal feeding operations (CAFOs) in Missouri, concern over eutrophication of our large recreational lakes, and continuing urban sprawl, among other problems, have produced questions our present monitoring program is incapable of answering. This inadequacy is demonstrated, in part, by the fact that only 34 percent of Missouri's classified stream miles are considered to be monitored, while 59 percent are completely unassessed.

A water quality monitoring strategy for Missouri was completed in 2005 and was updated in 2007. This proposal provides an overview of the current monitoring program and identifies additional needs. Among the major monitoring needs identified by this strategy are biological monitoring for great rivers, large rivers, and large reservoirs, chemical and biological monitoring for wetlands, and increased surveys of unclassified streams. The program is also in the process of expanding its use of new monitoring technologies, such as continuous data sondes, and efficiencies in monitoring, such as using biological monitoring to characterize the health of a water body.

ASSESSMENT METHODOLOGY

This section describes the procedures used by the Missouri Department of Natural Resources to rate the quality of Missouri's waters.

Water quality is judged by its conformance with Missouri's Water Quality Standards. These standards were first implemented for all Missouri streams and a few large lakes in 1970 and are revised at least once every three years. These standards now list more than 24,000 miles of classified streams and 459 classified (significant, mostly public) lakes representing 302,867 surface acres of water, along with the uses for which these waters are protected. These standards also list the maximum allowable concentrations of chemicals and bacteria in these waters.

The table below lists the various uses of Missouri's waters and the portions of state waters that are protected for each use.

Table 6. Missouri Waters Protected For Various Uses.

	Stream	% of	Lake	% of
<u>Designated Use</u>	<u>Miles</u>	<u>Total</u>	<u>Acres</u>	<u>Total</u>
Protection of Aquatic Life and Fish Consumption	24,431.0	100	302,867	100
Subset: Warm-Water Fishery	20,875.7	85	291,635	96
Cool-Water Fishery*	3,257.1	13	0	0
Cold-Water Fishery**	298.2	1	11,232	4
Livestock and Wildlife Watering	24,431.0	100	302,867	100
Whole Body Contact Recreation	23,998.7	98	302,867	100
Secondary Contact Recreation	8,872.9	36	256,601	85
Drinking Water Supply	3,410.5	14	133,692	44
Industrial	1,589.7	7	6,959	2
Antidegradation:				
Outstanding National Resource Waters	171.2			
Outstanding State Resource Waters	203.5***			
Total Classified Waters in Missouri	24,431.0		302,867	

^{*}smallmouth bass, rock bass

Classified streams of Missouri are all permanently flowing streams or streams with permanent pools. All classified waters of the state, including significant public lakes, are classified for protection of aquatic life, livestock and wildlife watering, and fish consumption by humans. The Water Quality Standards for these uses set the maximum allowable concentrations for 117 chemicals in these waters. A subset of these waters classified for drinking water supply and groundwater has maximum allowable concentrations for an additional 79 chemicals in the standards. Waters protected for whole body contact recreation such as swimming or water skiing also have a maximum allowable bacteria standard.

Missouri's Water Quality Standards also contain narrative criteria. These standards are not numbers but general statements about the expectations for waters of the state. These standards require waters to be free of objectionable odors, color, turbidity, trash, floating materials or bottom deposits, and of conditions harmful to aquatic life, such as high water temperature, low dissolved oxygen or chemical toxicity. Importantly, these standards apply not just to the classified waters, but to all waters of the state, including the small intermittent streams that only carry water during and shortly after rainfall or snow melt.

The Methodology for the Development of the 2012 Section 303(d) List in Missouri, commonly referred to as Missouri's 2012 Listing Methodology Document, or LMD, describes in detail both what data may be used for assessment and what assessment methods are to be used in interpreting Missouri's Water Quality

^{**}trout

^{***}Outstanding State Resource Waters also include 270 acres of marsh wetlands in three locations.

Standards to arrive at both the 2012 303(d) list and this 2012 305 (b) report. This document goes through a process of stakeholder input and review and is revised during every biennial listing cycle. Missouri's proposed 2012 303(d) list is presented as Table 14 in Appendix 1 of this report. Table 15 contains those waters which were also found to be impaired, but which already have measures in place to correct the impairment, such as a Total Maximum Daily Load (TMDL), or otherwise do not qualify for the 303(d) list. Table 16 lists those waters for which an impairment is suspected, but sufficient data does not currently exist to make an official assessment.

Table 7. Summary of Monitored and Evaluated Waters.

Degree of Use Support	Evaluated Stream Miles	Monitored Stream Miles	Total Stream Miles Assessed	Evaluated Lake Acres	Monitored Lake Acres	Total Lake Acres Assessed
Fully Supporting All Assessed Uses	1,000.3	3,512.2	4,512.5	905	125,556	126,461
Impaired For One or More Uses	689.0	4,754.3	5,443.3	27	69,712	69,739
TOTAL ASSESSED	1,689.3	8,266.5	9,955.8	932	195,268	106,667
TOTAL UNASSESSED			14,475.2			196,200

Monitored waters are those waters for which sufficient water quality data for an assessment has been collected in the past five years. Approximately 34 percent of all classified stream miles and 64 percent of all classified lake acres are considered to be monitored.

Evaluated waters are those waters which have not been adequately monitored in the past five years. Either older data is available that is still considered representative of present conditions, or they have geology and land use similar to nearby monitored waters and their water quality assessment is assumed to be the same as those nearby monitored waters. Seven percent of all classified stream miles and less than one percent of all classified lake acres are considered to be evaluated.

Unassessed waters are those waters that are not monitored directly and do not have nearby monitored waters with similar geology and land use. Thus, these represent the classified waters in the state for which we are unable to make an accurate assessment of their compliance with water quality standards and Clean Water Act goals. Fifty-nine percent of classified stream miles fall into this category. Sixty-five percent of classified lake acres are considered to be unassessed.

ADDITIONAL INFORMATION ON MISSOURI LAKES

Summary Statistics

Information on beneficial use attainment in classified lakes is given in Tables 1 and 2. The acreages of classified lakes not fully supporting beneficial uses by major source category are as follows:

Nonpoint Sources	49,901 acres
Point Sources	48,434 acres
Atmospheric Deposition	24,560 acres
Hydromodification	246 acres

Background

Missouri's definition of significant lakes corresponds to the Department of Natural Resources list of classified lakes and includes lakes that fall into one of the following three categories: (1) small public drinking water reservoirs; (2) large multi-purpose reservoirs; and (3) reservoirs or lakes with important recreational values.

It should be noted that Missouri has only a few naturally occurring lakes, these being primarily depressions or old oxbows on the Missouri or Mississippi River floodplain. Most classified lakes in the state are manmade reservoirs. In addition, high acidity is not a problem in Missouri lakes due to the high amounts of calcium carbonate found in the geology.

Trophic Status

Eutrophication is a natural process that occurs in lakes involving the gradual filling of the lake over time accompanied by increasing aquatic plant growth. This concept also encompasses the enrichment of lakes and reservoirs by addition of nitrogen and phosphorus from human activity. This additional nutrient load causes increased aquatic plant growth, predominantly of phytoplankton, which causes lake water to be greener and more turbid.

The trophic state of a lake typically refers to the total nitrogen or phosphorus concentration in the lake or the amount of algae or other aquatic plants present in the lake. Oligotrophic lakes are clear with few nutrients and very little aquatic plant growth. Mesotrophic, eutrophic and hypereutrophic are terms referring to lakes with correspondingly higher levels of nutrients and aquatic plant growth. Trophic state is an important way to characterize lakes because it relates directly to such factors as lake clarity, which is greater in oligotrophic and mesotrophic lakes, and fish production, which tends to be greater in eutrophic lakes.

The method presently used by the state to determine trophic status was derived from the work by Wetzel, R.G., 1975; "Limnology", Table 14-11; and from Vollenweider, R.A. and J.J. Kerekes, 1980; EPA440/5-81-010; "Restoration of Lakes and Inland Waters". The criteria are shown in the table below.

Table 8. Definition of Trophic Classification.

Trophic Class	Chlorophyll-A	Total Phosphorus
	$(\mu g/L)$	$(\mu g/L)$
Oligotrophic	<3	<10
Mesotrophic	3-10	10-30
Eutrophic	11-56	31-100
Hypereutrophic	>56	>100

Summary results of studies conducted by the University of Missouri between 1989 and 2011 on trophic status of Missouri lakes follow.

Table 9. Trophic Status of Selected Missouri Lakes and Reservoirs.

<u>LAKE</u>	COUNTY	<u>LOCATION</u>	YEARS OF RECORD		$\underline{\mathbf{I}}^1 \ \underline{\mathbf{TP}}^2 \ \underline{\mathbf{TN}}^3$	CHL-A ⁴	TROPHIC STATE ⁵
GLACIAL PLAIN	<u>S</u>						
*Allaman Lake Baring C.C. Lake Bean Lake Belcher Branch L. Bethany Lake #2	Clinton Knox Platte Buchanan Harrison	24, 56 N, 30W 26, 63N, 12W 12/14, 54N, 37W 8/17, 55N, 34W 27, 64N, 28W	8 9 1 6	1.2 1.3 0.1 1.1 1.3	40 645 28 938 264 1,658 35 565 33 713	15 20 144 12 11	E E HE E E
Big Lake Bilby Ranch Lake Blind Pony Lake Bowling Green L. Breckenridge City Reservoir	Holt Nodaway Saline Pike Caldwell	18/19, 61N, 39W 13/24, 64N, 38W SE18, 49N, 22W 29, 53N, 2W 3, 57N, 26W	12	0.2 1.0 0.6 1.9 0.9	328 2,508 51 922 96 1,319 24 516 63 866	166 35 40 8 8	HE E E M E
Brookfield Lake Bucklin Lake *Busch W.A. #16 *Busch W.A. #37 Cameron Lake #3	Linn Linn St. Charles St. Charles DeKalb	33, 58N, 19W 11, 57N, 18W 35/36, 46N, 2E 27, 46N, 2E 9, 57N, 30W	20 2 1 3 2	1.2 0.5 1.8 1.2 0.4	23 633 135 1,994 26 594 28 485 138 1,196	8 16 14 7 23	M E E M E
Cameron Lake #4 (Grindstone) Charity Lake Clarence Lake #2 Lake Contrary Crystal Lake	DeKalb Atchison Shelby Buchanan Ray	5, 57N, 30W 32, 66N, 41W 15/16, 57N, 12W 26, 57N, 36W 32, 53N, 29W	1 3 1 6 2	0.4 1.5 0.7 0.3 0.6	196 1,753 39 615 52 904 365 3,060 82 918	22 17 27 194 34	HE E E HE E
*Daniel Boone L. *Dean Lake Deer Ridge Community Lake Edina Lake Edwin A. Pape L.	Shelby Chariton Lewis Knox Lafayette	31/32, 58N 12W 3, 54N, 21W 18, 62N, 8W 12, 62N, 12W 20, 48N, 24W	2 1 22 11 12	0.2 0.1 1.1 0.7 0.6	187 1,424 382 2,110 45 788 72 1,291 83 1,078	38 5 18 29 30	HE HE E E
Ella Ewing Lake Elmwood City L. Forest Lake Fox Valley Lake Green City Lake	Lewis Sullivan Adair Clark Sullivan	21, 64N, 10W 35, 63N, 20W 14, 62N, 16W 27, 66N, 8W NE16, 63N, 18W	9 11 22 11 8	0.6 0.8 1.3 1.9 0.6	90 1,376 61 791 25 418 25 656 82 1,068	34 19 6 12 28	E E M M E
Hamilton Lake *Happy Holler L. Harrison Co. Lake Hazel Creek Lake Henry Sever Lake	Adair	15, 57N, 28W 8/17, 60N, 34W 17/30, 65N, 28W 31, 64N, 15W 14, 60N, 10W	11 3 12 14 22	0.8 0.9 0.7 1.3 0.8	61 968 70 1,049 68 1,063 29 608 55 1,059	14 53 39 9 18	E E E M E

Higginsville Lake Hunnewell Lake *Indian Creek Lake Jamesport City L. Jamesport	Lafayette Shelby Livingston Daviess	9, 49N, 25W 25, 57N, 9W 15/27, 59N, 25W 22, 60N, 26W	22 22 5 2	0.6 1.0 1.7 0.9	99 1,278 44 801 23 630 114 993	27 20 12 28	E E M E
Community Lake	Daviess	20, 60N, 26W	4	0.4	137 1,942	120	HE
*Jo Shelby Lake King City New	Linn	36, 57N, 22W	4	0.9	70 1,101	40	E
Reservoir King City Old	Gentry	E28, 61N, 32W	3	0.7	74 989	22	Е
Reservoir	Gentry	NW28, 61N, 32W	1	0.3	212 1,445	86	HE
King Lake Kraut Run Lake	DeKalb	12/13, 60N, 32W	7	0.2	213 1,794	21	HE
(Busch W.A. #33)	St. Charles	23, 46N, 2E	22	0.5	99 1,117	63	HE
La Belle Lake #2	Lewis	NE 16, 61N, 9W	7	0.8	69 1,462	46	Е
Lancaster City L.	Schuyler	23, 66N, 15W	6	0.7	72 927	32	E
La Plata L. (New)	Macon	14, 60 N, 14W	5	1.2	31 835	15	E
Lawson City Lake	Ray	31, 54N, 29W	3	0.8	36 958	29	E
Limpp Lake	Gentry	29, 62N, 32W	3	0.4	117 1,681	80	Ē
Lincoln Lake	Lincoln	8, 49N, 1E	21	2.3	17 431	5	M
Linneus Lake	Linn	36, 59N, 21W	2	0.6	84 943	25	Е
Little Dixie Lake	Callaway	26, 48N, 11W	23	0.6	65 850	24	E
Long Branch Lake		18, 57N, 14W	23	0.7	53 890	16	Е
Macon Lake	Macon	17, 57N, 14W	13	0.8	52 890	29	E
Maple Leaf Lake	Lafayette	4, 48N, 26W	8	1.1	40 832	21	Е
Marceline City L.	Chariton	14, 56N, 19W	14	0.8	110 1,166	43	E
Marceline Res.	Linn	28, 57N, 18W	3	0.7	133 1,438	41	Е
Lake Marie	Mercer	36, 66N, 24W	10	2.7	15 445	4	M
Mark Twain Lake	Ralls	26, 55N, 7W	23	1.0	71 1,367	17	E
Maysville L. (N)	DeKalb	33, 59N, 31W	11	0.6	194 1,331	47	HE
	DeKalb	3, 58N, 31W	1	0.9	68 853	26	E
Memphis Reservoir	r Scotland	14, 65N, 12W	12	0.6	79 1,244	47	E
Milan Lake South	Sullivan	2/12, 62N, 20W	12	1.0	45 688	13	Е
Monroe City L. B	Monroe	30, 56N, 7W	11	0.5	86 1,143	35	E
Monroe City L.							
Rte. J	Ralls	27/34, 56N, 7W	2	0.6	119 1,338	27	E
Mozingo Lake	Nodaway	19, 65N, 34W	12	1.4	31 825	20	E
Nehai Tonkayea L.	Chariton	11, 55N, 18W	10	1.8	18 418	3	M
Nodaway Lake	Nodaway	20, 65N, 35W	12	0.8	44 1,014	24	E
Old Bethany City Reservoir	Harrison	2, 63N, 28W	1	1.3	34 576	7	M
†Old Kings Lake	Lincoln	NW Surv. 1817	1	0.3	278 1,573	80	HE
Lake Paho	Mercer	25, 65N, 25W	11	0.8	48 841	14	Е
*Philips Lake	Boone	32, 58N, 12W	4	1.0	41 711	18	E
Pike Lake	Livingston	2, 59N, 25W	2	1.4	29 647	12	E
Pony Express Lake	-	33, 58N, 31W	12	0.8	67 1,057	32	E

*Prairie Lake *Prairie Slough Ray County Lake Rocky Fork Lake Rocky Hollow L.	St. Charles	Surv. 1790	1	0.7	98 790	12	E
	Lincoln	2/12, 51N, 2E	1	0.2	231 2,495	72	HE
	Ray	13, 52N, 28W	3	0.4	158 1,969	134	HE
	Boone	31, 50N, 12W	8	1.9	23 546	7	M
	Clay	33, 53N, 30W	10	1.2	67 842	31	E
Rothwell Lake	Randolph	NE/SE3, 53N, 14W	3	1.2	52 858	30	E
Lake St. Louis	St. Charles	Surv. 54	9	0.5	86 1,171	29	E
Lake Ste. Louise	St. Charles	NW Surv. 929	3	1.1	31 513	6	M
*Santa Fe Lake	Macon	5, 60N, 14W	3	1.1	49 1,021	40	E
Savannah Lake	Andrew	7, 59N, 35W	3	1.2	41 880	19	E
Sears Comm. Lake	Sullivan	18, 63N, 19W	1	0.4	66 790	14	E
Shelbina Lake	Shelby	20, 57N, 10W	11	0.6	97 1,054	37	E
Shelbyville Lake	Shelby	19/20, 58N, 10W	1	0.4	160 1,587	93	HE
Lake Showme	Scotland	15, 65N, 12W	3	1.2	40 949	27	E
Smithville Lake	Clay	13, 53N, 33W	22	1.0	33 851	17	E
Spring Lake	Adair	10/11, 61N, 16W	9	1.2	35 533	9	E
Sterling Price Lake	Chariton	17, 53N, 33W	10	0.6	105 1,466	78	HE
Sugar Creek Lake	Randolph	16, 54N, 14W	10	0.8	55 757	26	E
Sugar Lake	Buchanan	27, 55N, 37W	6	6	0.2 333	2,524	HE
*Swan Pond	Lincoln	Surv. 1732	1	0.3	345 1,658	126	HE
Thomas Hill Res.		24, 55N, 16W	13	0.7	53 773	14	E
Thunderhead Lake		15, 66N, 19W	12	0.8	50 971	17	E
Tobacco Hills Lake		11, 53N, 35W	2	2.3	22 511	7	M
Unionville Res.		27, 66N, 19W	13	0.6	95 1,207	39	E
Vandalia Lake		12, 53N, 5W	13	1.0	73 1,024	37	E
Lake Viking	Daviess	9, 59N, 28W	22	1.4	27 515	9	M
Wakonda Lake	Lewis	13/14, 60N, 6W	6	0.8	95 1,186	51	E
Watkins Mill Lake	Clay	22, 53N, 30W	22	0.9	40 640	18	E
Waukomis Lake	Platte	17, 51N, 33W	10	1.7	25 593	14	E
Weatherby Lake	Platte	15, 51N, 34W	3	2.0	20 403	5	M
•	Lincoln	S Surv. 1686	3	2.4	20 627	6.4	M
	DeKalb	4, 58N, 31W	5	0.7	82 1,161	50	E
	Worth	29/32, 65N, 32W	3	0.6	74 1,413	50.7	E
OSAGE PLAINS							
Adrian Reservoir Amarugia Highlands Lake Atkinson Lake Blue Springs Lake Bushwhacker Lake		3, 41N, 31W 10, 43N, 32W 6, 37N, 28W 3, 48N, 31W 27, 34N, 32W	9 21 6 5	0.5 1.0 0.5 1.0 1.4	57 795 51 657 75 1,032 36 557 30 622	29 12 39 18 16	E E E E E
Butler Lake Cat Claw Lake Coot Lake Cottontail Lake Drexel City Reservoir South	Bates Jackson Jackson Jackson Bates	14, 40N, 32W NW14, 47N, 31W SW22, 47N, 31W NSW14, 47N, 31W 7, 42N, 33W	5 4 4 4	0.7 0.4 0.6 0.5	67 941 114 1,072 59 1,105 104 941 51 1,062	33 28 32 21	E E E E
	_ *****	., .=, ,,	•	0.7	21 1,002		

Drexel Lake *Four Rivers CA L		6, 42N, 33W 4, 37N, 31W	1 1	0.7 1.0	80 1 34 77	,341 460 997	12 7 38	E M E
Garden City Lake *Gopher Lake Harmony	Cass Jackson	31, 44N, 29W NW23, 47N, 31W	1 4	0.5 0.4	110 1		39	E
Mission Lake	Bates	15, 38N, 32W	9	1.1	51	840	24	E
Harrisonville City Lake	Cass	26, 46N, 31W	9	0.8	52	951	19	Е
Hazel Hill Lake	Johnson	28, 47N, 26W	11	0.7	53 1	,060	36	Е
Holden City Lake	Johnson	29, 46N, 28W	8	0.7	46	899	15	Е
Jackrabbit Lake	Jackson	SENE15, 47N, 31W	4	0.6	117	768	14	Е
Lake Jacomo	Jackson	11, 48N, 31W	9	1.3	34	574	19	E
Lamar Lake	Barton	32, 32N, 30W	12	0.8		,017	49	E
Lone Jack Lake	Jackson	11/14, 47N, 30W	3	1.7	28	646	17	E
Longview Lake	Jackson	20, 47N, 32W	9	0.8	36	746	12	E
Lotawana Lake	Jackson	29, 48N, 30W	9	1.4	33	680	19	Е
Montrose Lake	Henry	33, 41N, 27W	11	0.3	190 1	,268	62	HE
Nell Lake	Jackson	15/22, 47N, 31W	4	0.5	94 1	,200	44	E
North Lake	Cass	28, 45N, 31W	22	0.7	102 1		45	Е
Odessa Lake	Lafayette	15, 48N, 28W	3	1.4	39	853	22	Е
Prairie Lee Lake	Jackson	27, 48N, 31W	9	0.8	56	903	26	Е
Raintree Lake	Cass	6, 46N, 31W	22	0.7	55	85	14	E
Spring Fork Lake	Pettis	21, 44N, 21W	12	0.6	159 1	,141	48	Е
Lake Tapawingo	Jackson	34, 49N, 31W	8	1.2	36	788	32	E
*Tebo Lake	Pettis	7/12, 44N, 22W	6	2.8	18	609	4	M
Winnebago Lake	Cass	9, 46N, 31W	10	0.9	50	842	20	E
OZARK BORDER	=							
*Ashland Lake	Boone	19, 46N, 11W	1	0.6	119 1	684		HE
Beaver Lake	Butler	22, 25N, 4E	1	1.4	19	370	5	M
*Bella Vista Lake	Cape	2/11, 32N, 13E	8	1.5	23	524	10	M
Bena Vista Bake	Girardeau	2/11, 3211, 132	O	1.5	23	321	10	111
*Bennitt Lake	Howard	2, 51N, 14W	2	1.2	26	611	12	Е
Binder Lake	Cole	36, 45N, 13W	18	1.0		782	26	E
*Boutin Lake	Cape Girardeau	15, 32N, 14E	8	1.6	25	622	11	M
Creve Coeur Lake	St. Louis	20, 46N, 5E	8	0.3	152 1	,064	58	HE
*Dairy Farm L. #1		34, 49N, 14W	4	0.4	223 2		90	HE
*Dairy Farm L. #3		35, 49N, 14W	4	0.5	484 1		70	HE
*D.C. Rogers Lake		3, 50N, 16W	11	1.2	33	542	9	M
*Eureka Lake	St. Louis	NE31, 44N, 4E	1	0.8	48	830	14	E
Fayette Lake #2	Howard	4, 50N, 16W	9	0.9	52	833	24	E
Lake Forest	Ste.	36, 38N, 7E	10	1.3	43	649	22	E
	Genevieve							
Lake Girardeau	Cape Girardeau	9, 30N, 11E	8	0.9	62	896	42	Е
Glover Spring Lake		13, 47N, 9W	7	1.2	67	863	22	E

Goose Creek Lake Higbee Lake Jennings Lake Manito Lake Lake Northwoods	St. Francois Randolph St. Louis Moniteau Gasconade	26,38N, 6E 9, 52N, 14W 8, 46N, 7E 8/9, 44N, 17W 33, 43N, 5W	11 2 1 11 12	2.3 1.1 0.7 0.6 1.2	14 31 78 103 24	388 640 682 1,028 448	4 9 18 19 5	M M E E M
Perry County Community Lake Lake Pinewoods Pinnacle Lake Prairie Home CA	Perry Carter Montgomery	22, 35N, 10E 7, 26N, 3E 24, 47N, 5W	9 7 6	0.8 1.5 2.7	87 31 22	1,035 661 454	46 15 5	E E M
Lake #2 Simpson Park Lake	Cooper St. Louis	6, 46N, 15W 16, 44, 5E	2 1	0.9 0.7	32 111	680 987	9 32	M HE
Timberline Lake Lake Tishomingo *Tri-City	St. François Jefferson	23, 38N, 4E 5, 41N, 4E	11 11	4.2 1.9	9 22	294 490	2 6	O M
Community Lake Tywappity Lake Wanda Lee Lake	Boone Scott Ste. Genevieve	24, 51N, 12W 8, 29N, 13E 2, 37N, 7E	10 8 10	0.8 0.8 1.3	57 56 56	865 1,079 577	20 44 26	E E E
Lake Wappapello Lake Wauwanoka *Wellsville Lake	Wayne Jefferson Montgomery	3, 26N, 3E 1, 40N, 4E 9/10, 49N, 6W	22 12 2	0.9 3.1 4.5	37 13 8	521 557 347	25 3 1	E O O
OZARK HIGHLAN	NDS							
Austin Lake Ben Branch Lake *Bismarck Lake Brays Lake Bull Shoals Lake	Texas Osage St. Francois Phelps Taney	30, 29N, 11W 14/15, 44N, 8W 19, 35N, 4E 26/35, 37N, 8W 13, 21N, 17W	10 4 11 1 8	1.6 1.8 1.4 2.2 2.2	22 21 33 14 18	545 670 471 388 360	8 16 16 4 8	M M M M
*Lake Capri *Lake Carmel Clearwater Lake Council Bluff Lake Crane Lake			22 12 22 22 29	4.7 2.8 1.9 3.3 1.3	6 10 14 7 14	291 311 218 221 239	2 3 6 2 4	O O M O M
Fellows Lake Fourche Lake Fredericktown	Greene Ripley	22, 30N, 21W 22, 23N, 1W	22 11	2.7 3.4	13 9	347 245	5 3	M O
City Lake Harry S. Truman L. Indian Hills Lake	Madison Benton Crawford	6, 33N, 7E 7, 40N, 23W 23, 39N, 5W	10 22 12	0.7 1.2 1.0	66 44 36	753 832 640	33 17 18	E E E
Lake Killarney *Lafitte Lake *Little Prairie Lake Loggers Lake Lower Taum Sauk Lake		1, 33N, 4E 28, 37N, 4E 21, 38N, 7W 10, 31N, 3W 33, 33N, 2E	8 2 22 8	0.8 4.2 1.2 3.1	62 6 27 10	613 321 476 224	28 2 9 4	E O M M
		,, -	,				٥.	

Mac Lake (Ziske) *Lake Marseilles McCormick Lake McDaniel Lake *Miller Lake	Dent	NE17, 34N, 5W	8	1.7	23	566	19	E
	St. Francois	29, 37N, 4E	11	3.6	10	350	2	O
	Oregon	8/9, 25N, 4W	3	3.3	5	109	1	O
	Greene	26, 30N, 22W	21	1.3	32	463	17	E
	Carter	1, 27N, 1E	10	1.5	20	493	7	M
Monsanto Lake	St. Francois	20, 36N, 5E	10	2.2	10	378	2	O
Lake Niangua	Camden	19, 37N, 17W	1	0.5	52	668	5	M
Nims Lake	Madison	24, 34N, 6E	1	1.5	17	339	6	M
Noblett Lake	Douglas	25, 26N, 11W	8	2.6	16	231	4	M
Norfork Lake	Ozark	14, 21N, 12W	6	1.7	23	631	6	M
Lake of the Ozarks Palmer Lake Peaceful Valley L. Pomme de Terre L. *Pomona Lake	Washington Gasconade	19, 40N, 15W 22, 36N, 1E 25, 42N, 6W 2, 36N, 22W 26, 26N, 9W	19 1 12 23 1	1.9 2.1 1.3 1.7	31 8 37 28 50	607 199 842 564 605	16 2 29 16 10	E O E E E
Ripley Lake		10, 23N, 1E	7	1.7	28	719	21	E
Roby Lake		3, 32N, 11W	9	2.1	17	427	5	M
Shawnee Lake		NW17, 34N, 5W	8	1.8	26	553	20	E
Lake Shayne		25, 37N, 3E	21	3.0	6	268	1	O
Shepard Mtn. Lake		1, 33N, 3E	1	1.1	32	422	16	E
Sims Valley Lake Lake Springfield Stockton Lake Sunnen Lake Table Rock Lake	Texas Greene Cedar Washington Stone	17, 27N, 8W 20, 61N, 16W 15, 34N, 26W 4, 37N, 1E 22, 22N, 22W	9 8 23 13 18	1.1 0.9 2.7 2.7 3.2	26 59 14 13 11	498 1,005 448 282 401	13 20 7 4 5	M E M M
Lake Taneycomo SOUTHEASTERN	Taney LOWLAND	8, 23N, 20W <u>S</u>	7	3.3	23	787	3	M
Big Oak Tree SP L	. Mississippi	14, 23N, 16E	2 2	0.6	44	530	12	E
Upper Big Lake	Mississippi	25, 27N, 16E		0.3	339	2,050	181	HE

¹Secchi depth (m)

Trophic status correlates strongly with physiographic regions of the state. In agricultural northern and western Missouri, most lakes of known trophic state are eutrophic, while in the Ozark Border region, trophic states are more equally divided between eutrophic and either mesotrophic or oligotrophic lakes, and lean toward mesotrophic states in the Ozark Plateau. Most known hypereutrophic lakes are in glaciated northern Missouri (and most of those in the Ozark Border region are clearly influenced by extraordinary nonpoint sources), while nearly all oligotrophic lakes are in unglaciated, highly weathered Ozark terrain.

²Total Phosphorus (µg/L)

³Total Nitrogen (µg/L)

⁴Chlorophyll A (µg/L)

⁵Trophic State: O=Oligotrophic, M=Mesotrophic, E=Eutrophic, HE=Hypereutrophic

^{*}Unclassified Lake

[†]Classified as Stream

Controlling Pollution in Lakes

In Missouri, agriculture is considered the primary source of nonpoint source pollution, although urban areas represent a very significant source, as do abandoned mine lands, to a lesser extent. The department works to implement effective and appropriate Best Management Practices in the watersheds of impaired lakes and reservoirs.

In-lake management techniques that were previously funded under Section 314 can now be funded under Section 319 in the context of an appropriate Nonpoint Source (NPS) project. Several in-lake management techniques are eligible for Section 319 funding, including water level drawdown, shading, and biological controls such as fish or insects, and planting or harvesting of aquatic plants.

In addition, the department conducts and helps fund monitoring on lakes throughout Missouri. This includes statewide lake assessments and volunteer lake monitoring that is now funded through Section 319. For example, the University of Missouri-Columbia's Statewide Lake Assessment Program evaluates approximately 100 lakes each year. The program began collecting annual samples in 1989, with some samples taken as far back as 1978.

The 319 program supplies grants to improve lakes, such as projects that provide information and education. The department also works with several watershed groups on a regular basis. At least 77 watershed groups have been formed in Missouri. These groups work to educate and inform residents and landowners in their watershed about techniques they can use to minimize nonpoint source pollution.

The department's Soil and Water Conservation Program also helps Missouri's agricultural landowners conserve soil and water resources through several incentive programs, which are funded by a statewide sales tax. These programs include the Cost-Share Program, Loan Interest-Share Program and Agricultural Nonpoint Source Special Area Land Treatment Program (AgNPS SALT). Practices offered for cost-share reduce soil erosion by a variety of methods that may include increasing crop residue, improving vegetation, diversion or containment of water to facilitate slower release, protection of stream bank and forested areas from livestock, and reduction of wind erosion. Cost-share and other incentives are also available through the Natural Resources Conservation Service. AgNPS SALT projects focus on decreasing agricultural nonpoint source pollution and usually encompass watersheds averaging 50,000 acres in size. There are 33 active SALTs. Of the 67 that have been completed, five focused primarily on protecting lakes in the watershed. The Missouri Department of Conservation also has programs and information to help Missourians manage private lakes.

Total Maximum Daily Loads also help to reduce pollution in Missouri lakes and reservoirs. The program began in 1999 and as of January 31, 2011, 131 TMDL studies have been completed. Six of these were for lakes, and focused primarily on reducing nonpoint source pollution entering the lake. Appendix II shows the proposed schedule to complete needed TMDLs.

STATUS OF WETLANDS

Originally, about 4.8 million acres in Missouri (10.7 percent of the land surface of the state) were wetlands. Today, it is estimated that only about 113,000 acres remain. Several state and federal agencies have recognized the need to preserve and enhance our remaining wetlands.

The department's Water Resources Center administers the State Wetlands Conservation Plan, which encourages the protection and restoration of wetlands and provides technical assistance to other agencies involved in wetland issues. With the help of state and federal agencies, the department has completed several projects, including studies assessing urban wetlands, identifying types of wetlands through image analysis, determining the hydrology of Missouri riparian wetlands, and an assessment of specific wetland mitigation sites. Currently the department and its partners are working to locate small headwater wetlands in agricultural areas and establish a dollar value for wetlands under past, present and future conditions.

The Missouri Department of Conservation currently has 15 large, intensively managed wetlands, comprising approximately 81,000 acres. These wetlands are mainly in the floodplains of the Missouri, Mississippi, Grand, St. Francis, and Osage rivers.

In 1994, the U.S. Fish and Wildlife Service began the process of acquiring land from willing sellers in the Missouri River floodplain for a national wildlife refuge called Big Muddy. The project authorizes the purchase of up to 60,000 acres in 25 to 30 units between Kansas City and St. Louis. The refuge consists of over 16,700 acres of land in ten units as of April 2012. Although access is limited at some units, all are publicly accessible. The refuge focuses on restoring several kinds of riverine and floodplain habitat, allowing lands to interact naturally with the river and act as seasonal wetlands.

The Natural Resources Conservation Service Wetlands Reserve Program, begun in 1992, purchases easements of wetlands and provides funds for restoration of those wetlands. There are presently 858 easements covering 119,168 acres in place in Missouri.

Together MDC, USFWS and NRCS have protected more than 260,000 acres of wetlands through easements or purchases, restored more than 43,000 acres, and enhanced more than 41,000 acres in Missouri.

Four websites providing information on Missouri's wetlands and efforts to restore wetlands are given below:

www.dnr.mo.gov/env/wrc/wetlands.htm mdc.mo.gov/landwater-care/wetlands-management www.mo.nrcs.usda.gov/programs/wrp/wrp.html www.fws.gov/midwest/BigMuddy/

The following website describes the Missouri Resource Assessment Partnership (MoRAP) program, which calculated the figure of 113,000 wetland acres in Missouri, although the detailed numbers are no longer available. Wetland acreage was considered to be the sum of two categories of land cover, "Swamp" and "Marsh and Wet Herbaceous Vegetation". The relatively small total may be the result of a stricter definition of these categories than is necessary to put land under easement.

morap.missouri.edu/Projects.aspx

CHAPTER 4. GROUNDWATER ASSESSMENT

BACKGROUND

Less than half of Missourians rely on groundwater as the source of their drinking water. Groundwater is the major source of drinking water in the Ozarks and the Southeast Lowlands for both public and private supplies. The cities of St. Joseph, Independence, Columbia, and St. Charles use groundwater from the alluvial aquifer of the Missouri River. In the plains region of the state, many small communities are able to obtain adequate water from shallow alluvial wells near rivers or large creeks, and many individual households still rely on the shallow upland aquifer even though it yields only very small amounts of water.

In the Ozarks, groundwater yields are usually large and of excellent quality, as witnessed by the fact that unlike cities in other areas of the state, many municipalities there pump groundwater directly into their water supplies without treatment. However, the geologic character of the Ozarks that supplies it with such an abundance of groundwater, namely its ability to funnel large amounts of rainfall and surface runoff to the groundwater system, can present problems for groundwater quality. This is because much surface water flows directly to groundwater through cracks, fractures or solution cavities in the bedrock, with little or no filtration. Contaminants from leaking septic tanks or storage tanks, or surface waters affected by domestic wastewater, animal feedlots and other pollution sources can move directly into groundwater through these cavities in the bedrock.

As in the Ozarks, groundwater in the southeast lowlands is abundant and of good quality. Unlike in the Ozarks, contaminants are filtered by thick deposits of sand, silt and clay as they move through the groundwater system. Because of this, while shallow groundwater wells are subject to the same problems with elevated levels of nitrate or bacteria as are found locally in the Ozark aquifer and can also have low levels of pesticides, deep wells are generally unaffected by contaminants.

Shallow groundwater in the plains of northern and western Missouri tends to be somewhat more mineralized and to have taste and odor problems due to high levels of iron and manganese. Like shallow wells in the southeast lowlands, wells in this part of the state can be affected by nitrates, bacteria or pesticides.

In urban areas, alluvial aquifers of large rivers such as the Missouri and the Meramec that serve water supplies have occasionally been locally contaminated by spills or improper disposal of industrial or commercial chemicals.

WELL CONSTRUCTION AND GROUNDWATER QUALITY

Well water quality is greatly influenced by well construction. Public drinking water wells and many private wells are deep, and properly cased and grouted. These wells rarely become contaminated. However, many private wells are shallow or not properly cased. These wells can be easily contaminated by septic tanks, feedlots or chemical mixing sites near the well. Studies in Missouri have shown that two-thirds of wells contaminated by pesticides are less than 35 feet deep. The three most common problems in private wells are bacteria, nitrate and pesticides. Water quality standards for all of these pollutants can occasionally be exceeded in private wells. State regulations include standards for construction and wellhead protection for all new wells.

MAJOR POTABLE AQUIFERS IN MISSOURI

The locations of the major aquifers providing drinkable water in Missouri are described below. The unconfined aquifers are those under water table conditions (the pressure at the water table is the atmospheric pressure). These unconfined aquifers tend to yield greater amounts of water, but are also more easily contaminated by activities occurring at the land surface. In confined aquifers, the upper level of the saturated zone is restricted so that the pressure level is greater than normally exists at that level of saturation. Confined aquifers are generally recharged more slowly than unconfined aquifers but are better protected from surface contaminants.

Glacial Till Aquifer

This aquifer covers most of Missouri north of the Missouri River. Glacial till is an unsorted mixture of clay, sand and gravel, with occasional boulders and lenses of sand or gravel. Loess, fine wind-blown silt deposits four to eight feet in depth, covers the till on the uplands. In places, the till is underlain by sorted deposits of sand or gravel. Although this aquifer is unconfined, surface water infiltrates very slowly and groundwater yields are very small. In scattered areas, the till has buried old river channels that remain as large sand or gravel deposits that contain much more groundwater than the till. Some households rely on this aquifer for drinking water, but it is generally inadequate as a source for municipal water supply.

Alluvial Aquifer

Alluvial aquifers are the unconfined aquifers on the floodplains of rivers and are of Quaternary age. In Missouri, the largest of these aquifers lie along the Missouri and Mississippi rivers, reaching their widest extent in the southeast lowlands, where they extend as far as 50 miles west of the Mississippi River. Many small communities north of the Missouri River use the alluvial aquifers of nearby streams for their drinking water supply, and the Missouri River alluvium supplies the cities of St. Joseph, Independence and Columbia and sections of St. Charles County. In the southeast lowlands, most private water supplies and about 45 percent of people served by public water supplies use water from the alluvial aquifer. Agricultural

irrigation consumes much more water in this area of Missouri than does domestic water use. All agricultural irrigation water is drawn from the alluvial aquifer.

Wilcox-McNairy Aquifer

These two aquifers lie beneath much of the alluvial aquifer of the southeast lowlands. They are in unconsolidated or loosely consolidated deposits of marine sands and clays of Tertiary and Cretaceous age. Except where the McNairy aquifer outcrops in the Benton Hills and along Crowley's Ridge, these aquifers are confined. They yield abundant amounts of good quality water, and they provide the water for 55 percent of people served by public supplies. In the southeastern part of this region, the deeper of these aquifers, the McNairy, becomes too mineralized to be used for drinking water supply. These two aquifers appear to be unaffected by contaminants of human origin.

Ozark-St. François Aquifer

This aquifer covers most of the southern and central two-thirds of Missouri. It is composed of dolomites and sandstones of Ordovician and Cambrian age. Most of the aquifer is unconfined. This aquifer is used for almost all public and private drinking water supplies in this area of Missouri. Exceptions would include supplies in the St. Francois Mountains, such as Fredericktown and Ironton, where the aquifer has been lost due to geologic uplift and erosion, and in Springfield, where demand is so heavy that groundwaters are supplemented with water from three large reservoirs and the James River.

Yields and water quality are typically very good, but in many areas, the bedrock is highly weathered, contains many solution cavities, and can transmit contaminated surface waters into the groundwater rapidly with little or no filtration. Where the confined portion of the aquifer is overlain only by the Mississippian limestones of the Springfield aquifer, the confined Ozark aquifer continues westward for 80 miles or more as a potable water supply, serving the communities of Pittsburg, Kansas and Miami, Oklahoma. However, where it is also overlain by less permeable Pennsylvanian bedrock, the confined Ozark becomes too mineralized for drinking within 20 to 40 miles.

The unconfined Ozark-St. Francois aquifer is susceptible to contamination from surface sources. Increasing urbanization and increasing numbers of livestock are threats to the integrity of portions of this valuable aquifer.

Springfield Aquifer

This aquifer covers a large portion of southwestern Missouri. It is composed of Mississippian limestones that are highly weathered, particularly in the eastern portion of the aquifer. The aquifer is unconfined and surface water in many areas is readily transmitted to groundwater. Urbanization and livestock production affect this aquifer. Elevated nitrates and bacterial contamination are common problems in groundwater of the Springfield aquifer.

GROUNDWATER QUALITY SUMMARY TABLES

Table 10 lists the major sources of groundwater contamination in Missouri, major contaminants, and reasons why these sources are the most important. Table 11 summarizes groundwater quality problems at hazardous waste sites. Table 12 provides information on levels of nitrate, pesticides and other toxic organics in public drinking water wells in a particular Missouri aquifer. Table 13 gives the present status of Missouri's groundwater protection strategy.

Table 10. Major Sources of Groundwater Contamination.

Contaminant Source	10 Highest Priority Sources (X) ¹	Significant Risk Factors ²	Contaminants ³
Agricultural Activities			
Agricultural chemical facilities			
Animal feedlots			
Drainage wells			
Fertilizer applications	X	A,C,D,E	a
Irrigation practices			
Pesticide applications	X	A,B,C,D,E	b
Storage and Treatment Activities	s		
Land application	X	A,D,E	a,c
Material stockpiles			
Storage tanks (above ground)			
Storage tanks (underground)	X	A,B,C,D,E	d
Surface impoundments			
Waste piles			
Waste tailings			
Disposal Activities			
Deep injection wells			T
Landfills			
Septic systems	X	A,D,E	a,c
Shallow injection wells			
Other			
Hazardous waste generators			
Hazardous waste sites	X	A,B,C,D	b,e,f,g
Industrial facilities	X	A,B,C,E	a,h,i,j
Material transfer operations			
Mining and mine drainage	X	A,E	f
Pipelines and sewer lines			
Salt storage and road salting			
Salt water intrusion	X	С	k
Spills	X	A,B,C,E	b,d,e,h
Transportation of materials			
Urban runoff			

Other sources (please specify)		
Other sources (please specify)		

¹Not in priority order.
²A. Human health or environmental toxicity risk
B. Size of population at risk

D. Number and/or size of contaminant sources

E. Hydrogeologic sensitivity

C. Location of sources relative to drinking water sources

³a. Nitrate

g. Radionuclides h. Ammonia

i. Pentachlorophenol

b. Organic Pesticidesc. Pathogens (Bacteria, Protozoa, Viruses)d. Petroleum Compoundse. Halogenated Solvents

j. Dioxin

k. Salinity/Brine

f. Metals

Table 11. Groundwater Contamination Summary.

Hydrogeologic Setting: All Aquifers Data Reporting Period: 2010-2011

Source Type	Number of sites	Number of sites that are listed and/or have confirmed releases	Number with confirmed groundwater contamination	Contaminants*	Number of site investigations (optional)	Number of sites that have been stabilized or have had the source removed (optional)	Number of sites with corrective action plans (optional)	Number of sites with active remediation (optional)	Number of sites with cleanup completed (optional)
NPL	25	25	25	1		-	_	-	-
CERCLIS (non-NPL)	30	30	30	1		-	-	-	-
DOD/DOE	305	37	33	1,2,3,4	50	213	231	18	45
LUST	3,578	195	55	3	165	82	-	1,090	74
RCRA Corrective Action	89	89	55	1,2,3,4	49	39	27	26	16
Underground Injection	22	22	22	1,3	22		22	22	
State Sites	856	856	387	1,2,3,4	847	575	575	49	575
Nonpoint Sources									
Other (specify)									

NPL - National Priority List; DOE- Department of Energy; DOD- Department of Defense; CERCLIS - Comprehensive Environmental Response, Compensation, and Liability Information System; LUST - Leaking Underground Storage Tanks; RCRA - Resource Conservation and Recovery Act. Underground Injection - includes sites where chemicals were injected into groundwater as part of approved remediation plan.

- 2- VOAs, PCBs, Pesticides, Dioxin, Metals, Radionuclides, SVOCs, etc.
- 3- BTEX, TPH, MTBE, PAHs, Metals, SVOA
- 4- Creosote, Pentachlorophenol, Organic Solvents, Chlorinated Solvents, Petroleum, Asbestos

^{*}Contaminants: 1- VOAs, SVOAs, Solvents, PCBs, Dioxin, PAHs, Herbicides, Pesticides, Metals, Explosives

Table 12. Aquifer Monitoring Data.

Hydrogeologic Setting: Unconsolidated Aquifers (Mississippi, Missouri, Grand, Nodaway)
Data Reporting Period: 2003-2011
Data below are from 7 randomly selected wells that draw from this aquifer. Samples were collected from

the well head. NR= Not Reported

Name Of Supply	1,1-Dichloroethane (ug/L)	1,1-Dichloroethylene (ug/L)	Alkalinity, Caco3 Stability (mg/L)	Alkalinity, Total (mg/L)
Elsberry	5.7	0.6	NR	NR
Independence	NR	NR	NR	3815
Lagrange	NR	NR	228	NR
Maitland	NR	NR	NR	NR
Mo American Brunswick	NR	NR	348	NR
Mo American St Joseph	NR	NR	NR	NR
Mound City	NR	NR	NR	NR
Name Of Supply	Arsenic (ug/L)	Barium (ug/L)	Calcium (mg/L)	Carbon, Total (mg/L)
Elsberry	NR	NR	NR	NR
Independence	NR	NR	NR	34.05
Lagrange	NR	89.9	74.5	NR
Maitland	NR	NR	NR	NR
Mo American Brunswick	5.12	390	122	NR
Mo American St Joseph	NR	NR	NR	NR
Mound City	NR	NR	NR	NR
Name Of Supply	Chloride (mg/L)	Chromium (ug/L)	Combined Radium (226 & 228) (pci/L)	Copper, Free (ug/L)
Elsberry	NR	NR	NR	NR
Independence	NR	NR	NR	NR
Lagrange	21.3	NR	1.1	2.42
Maitland	NR	NR	NR	NR
Mo American Brunswick	90.7	3.35	NR	2.43
Mo American St Joseph	NR	NR	NR	NR
Mound City	NR	NR	NR	NR
Name Of Supply	Fluoride (mg/L)	Hardness, Carbonate (mg/L)	Iron (ug/L)	Lead (ug/L)
Elsberry	NR	NR	NR	NR
Independence	NR	NR	NR	NR
Lagrange	0.2	1.65	595	1.12
Maitland	NR	NR	NR	NR
Mo American Brunswick	0.31	420	9050	NR
Mo American St Joseph	NR	NR	NR	NR
Mound City	NR	NR	NR	NR
Name Of Supply	Magnesium (mg/L)	Manganese (ug/L)	Methyl Tert-Butyl Ether (ug/L)	Nickel (ug/L)
Elsberry	NR	NR	12.29	NR
Independence	NR	NR	NR	NR
Lagrange	20.9	615	NR	2.58
Maitland	NR	NR	NR	NR
Mo American Brunswick	28	597	NR	1.81
Mo American St Joseph	NR	NR	NR	NR
Mound City	NR	NR	31.35	NR

Name Of Supply	Nitrate-Nitrite (mg/L)	Nitrogen-Ammonia As (N) (mg/L)	рН (рН)	Potassium (mg/L)
Elsberry	NR	NR	NR	NR
Independence	NR	NR	NR	NR
Lagrange	NR	NR	7.47	2.2
Maitland	133.46	NR	NR	NR
Mo American Brunswick	NR	0.37	7.29	4.53
Mo American St Joseph	NR	NR	NR	NR
Mound City	NR	NR	NR	NR
Name Of Supply	Radium-228 (pci/L)	Radon (pci/L)	Sodium (mg/L)	Sulfate (mg/L)
Elsberry	NR	NR	NR	NR
Independence	NR	NR	NR	NR
Lagrange	1.1	NR	12.2	33.4
Maitland	NR	NR	NR	NR
Mo American Brunswick	NR	238	63.5	45
Mo American St Joseph	NR	884	NR	NR
Mound City	NR	NR	NR	NR
Name Of Supply	TDS (mg/L)	Trichloroethylene (ug/L)	Zinc (ug/L)	
Elsberry	NR	3.37	NR	
Independence	NR	NR	NR	
Lagrange	321	NR	5.86	
Maitland	NR	NR	NR	
Mo American Brunswick	598	NR	15	
Mo American St Joseph	NR	NR	NR	
Mound City	NR	NR	NR	

Table 13. Summary of Groundwater Protection Programs.

Program or Activities	Check (X)	Implementation Status	Responsible State Agency
Active SARA Title III Program	X	Fully Established	MDPS/SEMA
Ambient Groundwater Monitoring System		N/A	
Aquifer Mapping and Characterization	X	Continuing Effort	DNR
Aquifer Vulnerability Assessment		N/A	
Comprehensive Data Management System		N/A	
EPA-Endorsed Core Comprehensive State Groundwater Protection Program (CSGWPP)		N/A	
Groundwater Best Management Practices	X	Continuing Effort	DNR
Groundwater Classification		N/A	
Groundwater Discharge Permits	X	Fully Established	DNR
Groundwater Legislation	X	Developed	DNR
Groundwater-Level Observation Network	X	Fully Established	DNR
Groundwater Monitoring at Sanitary Landfills	X	Fully Established	DNR
Groundwater Quality Standards	X	Fully Established	DNR
Interagency Coordination for Groundwater Protection Initiatives	X	Fully Established	DNR
Nonpoint Source Controls	X	Continuing Effort	DNR
Pesticide State Management Plan	X	Developed	MDA
Pollution Prevention Program	X	Continuing Effort	DNR
Resource Conservation and Recovery Act (RCRA) Primacy	X	Fully Established	DNR
State RCRA Program Incorporating More Stringent Requirements Than RCRA Primacy	X	Fully Established	DNR
State Septic System Regulations	X	Fully Established	MDHSS
State Superfund	X	Fully Established	DNR
Underground Injection Control Program	X	Fully Established	DNR
Underground Storage Tank Installation Requirements	X	Fully Established	DNR
Underground Storage Tank Permit Program		N/A	
Underground Storage Tank Remediation Fund		N/A	
Vulnerability Assessment for Drinking Water/ Wellhead Protection	X	Fully Established	DNR
Well Abandonment Regulations	X	Fully Established	DNR
Wellhead Protection Program (EPA-Approved)	X	Fully Established	DNR
Well Installation Regulations	X	Fully Established	DNR

MDPS/SEMA: Missouri Department of Public Safety, State Emergency Management Agency MDA: Missouri Department of Agriculture

MDHSS: Missouri Department of Health and Senior Services

Notes:

Active SARA Title III Program: This program is administered by the Missouri Department of Public Safety, State Emergency Management Agency.

Ambient Groundwater Monitoring System: There is no system per se for monitoring the quality of groundwater, as there is for groundwater levels. The state has participated in several opportunities to monitor ambient groundwater, such as impact analyses following the floods of 1993.

Aquifer Mapping and Characterization: The Water Resources Center participates in aquifer mapping. No present systematic activity is done, although these activities may be conducted in concert with hazardous substance release investigations. The department's Public Drinking Water Branch is currently working with the Water Resources Center to perform aquifer monitoring and characterization to delineate which aquifer zones are responsible for the highest concentration of radionuclides. In addition, the U.S. Geological Survey has done considerable work on aquifer characteristics.

Aquifer Vulnerability Assessment: The department does not have a specific program in place, but the department's Water Resources Center collects groundwater supply data and performs resource assessments.

Comprehensive Data Management System: None.

EPA-Endorsed Core Comprehensive State Groundwater Protection Program: No formal program has been established.

Groundwater Best Management Practices: Some BMPs are established as part of the Nonpoint Source Management Plan. The Soil and Water Conservation Program also provides cost-share to help agricultural landowners install BMPs on their land.

Groundwater Classification: There is no classification system at this time, although it has been proposed in the past.

Groundwater Discharge Permits: Underground Injection Control permits are issued jointly by the department's Division of Geology and Land Survey and Water Protection Program.

Groundwater Legislation: The Cave Resources Act and Clean Water Law deal directly with groundwater. Other laws, such as the Dead Animal Disposal Statute, prescribe protections for groundwater. There is no comprehensive groundwater protection statute per se.

Groundwater-Level Well Observation Network: Established in 1951, this network is operated by the department's Water Resources Center and currently consists of 75 wells.

Groundwater Monitoring at Sanitary Landfills: The department's Solid Waste Management Program oversees monitoring at sanitary landfills.

Groundwater Quality Standards: Standards have been established as part of state water quality standards.

Interagency Coordination for Groundwater Protection Initiatives: Opportunities for monthly coordination are provided through the Water Quality Coordinating Committee.

Nonpoint Source Controls: The nonpoint source management program provides guidance for voluntary controls. In addition, the department's Soil and Water Conservation Program provides cost-share for soil and water conservation.

Pesticide State Management Program: A general pesticide and water quality management plan was prepared by the Missouri Department of Agriculture in conjunction with the Missouri Department of

Natural Resources. The plan addresses both groundwater and surface water, and has been concurred with by EPA.

Pollution Prevention Program: The department uses outreach and assistance to educate Missourians on pollution prevention.

Resource Conservation and Recovery Act (RCRA) Primacy: RCRA is administered by the department's Hazardous Waste Program.

State RCRA Program Incorporating More Stringent Requirements than RCRA Primacy: Requirements are administered by the department's Hazardous Waste Program.

State Septic System Regulations: Regulations are administered by the Department of Health and Senior Services.

State Superfund: This program is administered by the department's Hazardous Waste Program, and provides for a state registry of confirmed abandoned hazardous waste disposal sites.

Underground Injection Control Program: The program is administered by the department's Division of Geology and Land Survey.

Underground Storage Tank Installation Requirements: Requirements are administered by the department's Hazardous Waste Program.

Underground Storage Tank Permit Program: Tanks are required to be registered but not permitted.

Underground Storage Tank Remediation Fund: The department does not have an underground storage tank remediation fund, but does have a similar fund called the Petroleum Storage Tank Insurance Fund. It was initially established to provide underground storage tank owners and operators with assistance in meeting state and federal financial responsibility requirements. It has since been amended, broadening eligibility and expanding benefits.

Vulnerability Assessment for Drinking Water/Wellhead Protection: Assessments are administered by the Department's Water Protection Program. A vulnerability assessment of Missouri drinking water to chemical contamination was conducted and implemented in 1991.

Well Abandonment Regulations: Regulations are administered by the department's Division of Land Geology and Land Survey.

Wellhead Protection Program (EPA-approved): This program is administered by the department's Water Protection Program.

Well Installation Regulations: Regulations are administered by the department's Water Protection Program.

For more information, call the Department of Natural Resources at (573)751-1300.

Appendix I Impaired or Potentially Impaired Waters of Missouri

Table 14. 2012 Missouri Section 303(d) List, As Approved by the Missouri Clean Water Commission, May 2, 2012

Year First Listed	WBID	Water Body Name	Class	MDNR Proposed Impairment Size	MDNR Water Body Size	Size Units	Pollutant	Source	Impaired Uses	Other (Unimpaired) Uses	Upstream X (UTM)	Upstream Y (UTM)	Downstream X (UTM)	Downstream Y (UTM)	County Upstream/ Downstream	Comment
2012	2188.00	Antire Cr.	Р	1.9	1.9	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	712451	4264469	710126	4264454	St. Louis	1
2012	2188.00	Antire Cr.	Р	1.9	1.9	Mi.	pH (W)	Source Unknown	AQL	LWW, WBC B	712451	4264469	710126	4264454	St. Louis	1
2012	752.00	Bass Cr.	С	4.4	4.4	Mi	Escherichia coli (W)	Source Unknown	WBC A	AQL, LWW	565035	4297419	561522	4298652	Boone	1
2012	3240.00	Baynham Br.	Р	4.0	4	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	379677	4092590	374820	4091654	Newton	1
2012	3265.00	Beaver Br.	Р	2.0	2.0	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	371093	4059701	371016	4056979	McDonald	1
2006	2760.00	Bee Fk.	С	1.4	8.7	Mi.	Lead (W)	Fletcher Lead Mine/Mill	AQL	CLF, LWW, WBC A	668836	4145688	670779	4145991	Reynolds	1
2008	3966.00	Bee Fk.	U	0.8	n/a	Mi.	Lead (S)	Fletcher Lead Mine/Mill	GEN		667504	4145795	668836	4145688	Reynolds	1,5
2006	7365.00	Belcher Branch Lake	L3	55.0	55	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC B	351065	4383634	351274	4382886	Buchanan	1
2006	444.00	Big Cr.	Р	1.0	22	Mi	Ammonia, Total	Bethany WWTP	AQL	DWS, LWW, WBC	409703	4456645	409044	4455654	Harrison	1
2006	444.00	Big Cr.	Р	6.0	22	Mi	Oxygen, Dissolved (W)	Bethany WWTP	AQL	DWS, LWW, WBC	409703	4456645	408309	4451145	Harrison	1
2012	1250.00	Big Cr.	Р	70.5	70.5	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	384117	4301048	422204	4249325	Jackson/ Henry	1
2012	2673.00	Big Cr.	Р	28.7	28.7	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	CLF, LWW, WBC	602889	4121487	623380	4141676	Texas/ Shannon	1
2010	2916.00	Big Cr.	Р	1.8	34.1	Mi.	Cadmium (S)	Glover smelter	AQL	CLF, LWW, SCR, WBC A	704416	4150512	704712	4147823	Iron	1
2010	2916.00	Big Cr.	Р	1.8	34.1	Mi.	Lead (S)	Glover smelter	AQL	CLF, LWW, SCR, WBC A	704416	4150512	704712	4147823	Iron	1
2010	1578.00	Big Piney R.	Р	4.0	8	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	DWS, LWW, SCR, WBC A	579857	4108429	583131	4112462	Texas	1
2006	2080.00	Big R.	Р	18.6	68	Mi.	Cadmium (S)	Old Lead Belt tailings	AQL	IND, LWW, WBC A	712102	4194405	701052	4226039	St. Francois	1
2006	2080.00	Big R.	Р	18.6	68	Mi.	Zinc (S)	Old Lead Belt tailings	AQL	IND, LWW, WBC A	712102	4194405	701052	4226039	St. Francois	1
2012	111.00	Black Cr.	С	19.4	19.4	Mi.	Escherichia coli (W)	Shelbyville WWTF, Nonpoint Source	WBC B	AQL, LWW	581889	4405281	593146	4393284	Shelby	1
2012	111.00	Black Cr.	С	19.4	19.4	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	581889	4405281	593146	4393284	Shelby	1
2012	3825.00	Black Cr.	Р	1.6	1.6	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, SCR, WBC	731265	4278201	732027	4276854	St. Louis	1
2012	3825.00	Black Cr.	Р	1.6	1.6	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	SCR, WBC B	AQL, LWW, WBC B	731265	4278201	732027	4276854	St. Louis	1

Year First Listed	WBID	Water Body Name	Class	MDNR Proposed Impairment Size	MDNR Water Body Size	Size Units	Pollutant	Source	Impaired Uses	Other (Unimpaired) Uses	Upstream X (UTM)	Upstream Y (UTM)	Downstream X (UTM)	Downstream Y (UTM)	County Upstream/ Downstream	Comment
2002	2769.00	Black R.	Р	47.1	47.1	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	CLF, DWS, IRR, LWW, SCR, WBC A	729879	4078164	729374	4042275	Butler	1
2008	2784.00	Black R.	Р	39.0	39.0	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	CLF, DWS, IRR, LWW, SCR, WBC A	697916	4112187	729879	4078164	Wayne/ Butler	1
2006	3184.00	Blackberry Cr.	С	3.5	6.5	Mi.	Chloride (W)	Asbury Power Plant	AQL	LWW, WBC B	360855	4132389	361557	4128066	Jasper	1
2008	3184.00	Blackberry Cr.	С	3.5	6.5	Mi.	Sulfate plus Chloride (W)	Asbury Power Plant	AQL	LWW, WBC B	360855	4132389	361557	4128066	Jasper	1
2006	417.00	Blue R.	Р	4.0	4	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, IND, LWW	371193	4329008	372993	4332275	Jackson	2
2006	418.00	Blue R.	Р	9.0	9	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, IND, LWW, SCR	368407	4319629	371193	4329008	Jackson	1
2006	419.00	Blue R.	Р	9.0	9	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC A	AQL, LWW, SCR	364901	4313172	368407	4319629	Jackson	1
2006	421.00	Blue R.	С	11.0	11	Mi.	Escherichia coli (W)	Runoff from Forest/ Grassland/ Parkland, Rural, Residential Areas, Urban Runoff/ Storm Sewers	WBC B	AQL, LWW, SCR	360464	4301404	364901	4313172	Jackson	1
2012	1701.00	Bonhomme Cr.	С	2.5	2.5	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	709487	4282267	711335	4284026	St. Louis	1
2012	1701.00	Bonhomme Cr.	С	2.5	2.5	Mi.	pH (W)	Source Unknown	AQL	LWW, WBC B	709487	4282267	711335	4284026	St. Louis	1
2006	750.00	Bonne Femme Cr.	Р	7.8	7.8	Mi	Escherichia coli (W)	Source Unknown	WBC A	AQL, LWW	560347	4298778	553841	4293824	Boone	1
2012	753.00	Bonne Femme Cr.	С	7.0	7	Mi	Escherichia coli (W)	Source Unknown	WBC B	AQL, LWW	565648	4303369	560347	4298778	Boone	1
2002	2034.00	Bourbeuse R.	Р	136.7	136.7	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	CLF, DWS, IRR, LWW, SCR, WBC A	622853	4221435	684284	4252201	Phelps/ Franklin	1
2012	7003.00	Bowling Green (Old) Lake	L1	28.2*	28.2*	Ac.	Nitrogen, Total (W)	Nonpoint Source	AQL	DWS, LWW, WBC B			658502	4356562	Pike	1
2012	7003.00	Bowling Green (Old) Lake	L1	28.2*	28.2*	Ac.	Phosphorus, Total (W)	Nonpoint Source	AQL	DWS, LWW, WBC B			658502	4356562	Pike	1
2012	1796.00	Brazeau Cr.	С	10.8	10.8	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	793971	4174893	806967	4172945	Perry	1
2002	1371.00	Brush Cr.	Р	4.0	4	Mi.	Oxygen, Dissolved (W)	Humansville WWTP	AQL	LWW, WBC B	448658	4182387	444772	4187316	Polk/St. Clair	1
2012	3273.00	Buffalo Cr.	Р	8.0	8	Mi.	Fishes Bioassessments (W)	Source Unknown	AQL	CLF, IRR, LWW, SCR, WBC A	369204	4075685	363942	4068061	Newton/ McDonald	1
2006	1865.00	Burgher Branch	С	2.0	2	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, SCR, WBC B	610212	4200276	611958	4199021	Phelps	1
2012	968.00	Burris Fork	Р	13.2	13.2	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, SCR, WBC A	528329	4260805	539737	4270178	Moniteau	1
2006	7057.00	Busch Lake #35	L3	51.0	51	Ac	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, WBC B			697821	4288225	St. Charles	1
2010	7627.00	Busch Lake #37		34.0	34	Ac	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	GEN				691967	4287291	St. Charles	1

Year First Listed	WBID	Water Body Name	Class	MDNR Proposed Impairment Size	MDNR Water Body Size	Size Units	Pollutant	Source	Impaired Uses	Other (Unimpaired) Uses	Upstream X (UTM)	Upstream Y (UTM)	Downstream X (UTM)	Downstream Y (UTM)	County Upstream/ Downstream	Comment
2006	3234.00	Capps Cr.	Р	5.0	5	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CDF, IRR, LWW, SCR	408560	4082432	402565	4083048	Barry	1
2010	2288.00	Castor River	Р	7.5	7.5	Mi	Escherichia coli (W)	Rural NPS	WBC A	AQL, IRR, LWW, SCR	760130	4115304	766458	4110867	Bollinger	1
2008	737.00	Cedar Cr.	С	7.9	37.4	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, SCR, WBC B	574525	4320028	573573	4311774	Boone	1
2010	1344.00	Cedar Cr.	Р	10.0	31	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	IRR, LWW, SCR, WBC A	419910	4170045	422889	4179237	Cedar	1
2008	1344.00	Cedar Cr.	Р	10.0	31	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	IRR, LWW, SCR, WBC A	419910	4170045	422889	4179237	Cedar	1
2010	1357.00	Cedar Cr.	С	16.2	16.2	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	412830	4154260	419910	4170045	Cedar	1
2008	1357.00	Cedar Cr.	С	16.2	16.2	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	412830	4154260	419910	4170045	Cedar	1
2006	3203.00	Center Cr.	Р	19.0	26.8	Mi.	Cadmium (S)	Tri-State Mining District	AQL	CLF, IND, IRR, LWW, SCR, WBC A	374188	4114507	356392	4112870	Jasper	1
2006	3203.00	Center Cr.	Р	19.0	26.8	Mi.	Cadmium (W)	Tri-State Mining District	AQL	CLF, IND, IRR, LWW, SCR, WBC	374188	4114507	356392	4112870	Jasper	1
2006	3203.00	Center Cr.	Р	19.0	26.8	Mi.	Lead (S)	Tri-State Mining District	AQL	CLF, IND, IRR, LWW, SCR, WBC	374188	4114507	356392	4112870	Jasper	1
2006	3203.00	Center Cr.	Р	19.0	26.8	Mi.	Zinc (S)	Tri-State Mining District	AQL	CLF, IND, IRR, LWW, SCR, WBC A	374188	4114507	356392	4112870	Jasper	1
2008	3210.00	Center Cr.	Р	21.0	21	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, IND, IRR, LWW, SCR	404363	4099549	383685	4107345	Newton/ Jasper	1
2010	3214.00	Center Cr.	Р	4.9	4.9	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CDF, IND, IRR, LWW, SCR	410293	4100642	404363	4099549	Lawrence/ Newton	1
2006	3168.00	Chat Cr.	С	2.1	2.1	Mi.	Cadmium (W)	Baldwin Park Mine	AQL	LWW, SCR, WBC B	436447	4092367	432992	4092650	Lawrence	1
2012	1781.00	Cinque Hommes Cr.	С	8.3	17.1	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	779380	4178472	786085	4185604	Perry	1
2006	1333.00	Clear Cr.	Р	15.5	15.5	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC A	402292	4186739	417798	4205707	Vernon/St. Clair	1
2006	1336.00	Clear Cr.	С	15.0	15	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	391893	4172796	402292	4186739	Vernon	1
2006	3238.00	Clear Cr.	Р	11.1	11.1	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	410982	4088929	397645	4088317	Barry/ Newton	1
2002	3239.00	Clear Cr.	С	3.5	3.5	Mi.	Nutrient/Eutrophica tion Biol. Indicators (W)	Monett WWTP	AQL	LWW, WBC B	415472	4086460	410982	4088929	Barry/ Newton	1
2002	3239.00	Clear Cr.	С	3.5	3.5	Mi.	Oxygen, Dissolved (W)	Monett WWTP	AQL	LWW, WBC B	415472	4086460	410982	4088929	Barry/ Newton	1
2002	7326.00	Clearwater Lake	L2	1635.0	1635	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC A			697889	4112199	Reynolds/ Wayne	1
2006	1706.00	Coldwater Cr.	С	5.5	5.5	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	IND, LWW, WBC B	735019	4299846	741431	4301794	St. Louis	1

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2008	1706.00	Coldwater Cr.	С	5.5	5.5	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, IND, LWW	735019	4299846	741431	4301794	St. Louis	1
2006	1706.00	Coldwater Cr.	С	5.5	5.5	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	IND, LWW, WBC B	735019	4299846	741431	4301794	St. Louis	1
2012	2177.00	Coonville Cr.	С	1.3	1.3	Mi.	Lead (W)	Source Unknown	AQL	LWW, WBC B	717462	4206553	717462	4206553	St. Francois	1
2006	1943.00	Courtois Cr.	Р	2.6	32	Mi.	Lead (S)	Doe Run Viburnum Division Lead mine	AQL	CLF, LWW, SCR, WBC A	669877	4181454	670873	4184595	Washington	1
2006	1943.00	Courtois Cr.	Р	2.6	32	Mi.	Zinc (S)	Doe Run Viburnum Division Lead mine	AQL	CLF, LWW, SCR, WBC A	669877	4181454	670873	4184595	Washington	1
2012	2382.00	Crane Cr.	Р	13.2	13.2	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	CDF, LWW, SCR, WBC A	445954	4088238	456896	4081483	Stone	1
2012	2816.00	Craven Ditch	С	11.6	11.6	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	IRR, LWW	730992	4068607	730724	4052481	Butler	1
2006	1703.00	Creve Coeur Cr.	С	2.0	2	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, WBC B	718162	4283169	718435	4287487	St. Louis	1
2006	1703.00	Creve Coeur Cr.	С	2.0	2	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	718162	4283169	718435	4287487	St. Louis	1
2010	1703.00	Creve Coeur Cr.	С	2.0	2	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	718162	4283169	718435	4287487	St. Louis	1
2006	1928.00	Crooked Cr.	Р	3.5	3.5	Mi.	Cadmium (S)	Buick Lead Smelter	AQL	CLF, LWW, WBC	662236	4174014	658207	4175647	Dent/ Crawford	2
2006	1928.00	Crooked Cr.	Р	3.5	3.5	Mi.	Cadmium (W)	Buick Lead Smelter	AQL	CLF, LWW, WBC	662236	4174014	658207	4175647	Dent/ Crawford	1
2006	1928.00	Crooked Cr.	Р	3.5	3.5	Mi.	Lead (S)	Buick Lead Smelter	AQL	CLF, LWW, WBC	662236	4174014	658207	4175647	Dent/ Crawford	2
2008	3961.00	Crooked Cr.	U	5.2	n/a	Mi.	Cadmium (W)	Doe Run Buick Lead Smelter	GEN		665048	4167501	662236	4174014	Iron/Dent	1
2010	3961.00	Crooked Cr.	U	5.2	n/a	Mi.	Copper (W)	Doe Run Buick Lead Smelter	GEN		665048	4167501	662236	4174014	Iron/Dent	1
2006	2636.00	Current R.	Р	124.0	124	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	CLF, IRR, LWW, SCR, WBC A	628643	4137634	696828	4041495	Shannon/ Ripley	1
2006	219.00	Dardenne Cr.	P1	7.0	7	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, SCR, WBC B	709437	4300131	713752	4304230	St. Charles	1
2010	221.00	Dardenne Cr.	Р	15.0	15	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, SCR, WBC B	692521	4289823	709437	4300131	St. Charles	1
2006	222.00	Dardenne Cr.	С	6.0	6	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	683306	4288823	692521	4289823	St. Charles	1
2006	690.00	Dark Cr.	С	9.1	9.1	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	535635	4374102	531818	4365676	Randolph	1
2012	3826.00	Deer Cr.	Р	1.6	1.6	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, SCR, WBC B	732027	4276854	733742	4275819	St. Louis	1
2012	3826.00	Deer Cr.	Р	1.6	1.6	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	SCR, WBC B	AQL, LWW, WBC B	732027	4276854	733742	4275819	St. Louis	1
2002	7015.00	Deer Ridge Lake	L3	48.0	48	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC	683249	4288804	692465	4289831	Lewis	1
2008	36.00	Des Moines R.	Р	29.0	29.0	Mi.	Escherichia coli (W)	Upstream/Downstr eam Source	WBC A	AQL, LWW, SCR	607490	4496653	633942	4471203	Clark	1
2006	3109.00	Ditch # 36	Р	7	7	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	535629	4374096	531824	4365664	Dunklin	1
2006	3810.00	Douger Branch	С	3.1	3.1	Mi.	Lead (S)	Aurora lead mining district	AQL	LWW	432992	4092650	428983	4092388	Lawrence	1

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2006	3810.00	Douger Branch	С	3.1	3.1	Mi.	Zinc (S)	Aurora lead mining district	AQL	LWW	432992	4092650	428983	4092388	Lawrence	1
2006	1180.00	Dousinbury Cr.	Р	3.5	3.5	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	436409	4092394	434896	4092716	Dallas	1
2012	3178.00	Dry Fork	С	3.4	3.4	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	420021	4116472	420475	4111831	Lawrence	1
2008	3189.00	Dry Fork	С	10.2	10.2	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, LWW	381619	4123453	379519	4128244	Jasper	1
2012	1314.00	Drywood Cr.	Р	3.8	29.9	Mi.	Total Dissolved Solids (W)	Acid Mine Drainage	AQL	LWW, WBC B	361695	4158073	361434	4162039	Barton	1
2006	3569.00	Dutro Carter Cr.	Р	0.6	1.5	Mi.	Oxygen, Dissolved (W)	Rolla SE WWTP	AQL	LWW, WBC B	611958	4199021	612762	4199004	Phelps	1
2010	372.00	East Fk. Crooked R.	Р	14.0	14	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	418037	4367621	423045	4349976	Ray	1
2006	457.00	East Fk. Grand R.	Р	25.0	25	Mi	Escherichia coli (W)	Nonpoint Source	WBC A	AQL, DWS, IRR, LWW, SCR	611959	4199047	612751	4199024	Worth/ Gentry	2
2008	608.00	East Fk. Locust Cr.	Р	13.0	13	Mi	Escherichia coli (W)	Municipal Point Source Discharges, Nonpoint Source	WBC B	AQL, LWW	610703	4198865	611959	4199047	Sullivan	1
2008	610.00	East Fk. Locust Cr.	С	0.4	13	Mi	Escherichia coli (W)	Municipal Point Source Discharges, Nonpoint Source	WBC B	AQL, LWW	490928	4451855	490792	4450898	Sullivan	1
2008	610.00	East Fk. Locust Cr.	С	12.6	13	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	492637	4468112	490928	4451855	Sullivan	1
2008	610.00	East Fk. Locust Cr.	С	12.6	13	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	492637	4468112	490928	4451855	Sullivan	1
2006	1282.00	East Fk. Tebo Cr.	С	10.4	14.5	Mi.	Oxygen, Dissolved (W)	Windsor SW WWTP	AQL	LWW, WBC B	453461	4263213	446903	4257226	Henry	1
2006	2166.00	Eaton Branch	С	0.9	1.2	Mi.	Cadmium (S)	Leadwood tailings pond	AQL	LWW, WBC B	710950	4193696	712102	4194405	St. Francois	1
2006	2166.00	Eaton Branch	С	0.9	1.2	Mi.	Cadmium (W)	Leadwood tailings pond	AQL	LWW, WBC B	710950	4193696	712102	4194405	St. Francois	1
2006	2166.00	Eaton Branch	С	0.9	1.2	Mi.	Lead (S)	Leadwood tailings pond	AQL	LWW, WBC B	710950	4193696	712102	4194405	St. Francois	1
2006	2166.00	Eaton Branch	С	0.9	1.2	Mi.	Zinc (S)	Leadwood tailings pond	AQL	LWW, WBC B	710950	4193696	712102	4194405	St. Francois	1
2006	2166.00	Eaton Branch	С	0.9	1.2	Mi.	Zinc (W)	Leadwood tailings pond	AQL	LWW, WBC B	710950	4193696	712102	4194405	St. Francois	1
2002	2593.00	Eleven Point R.	Р	22.7	22.7	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	CLF, IRR, LWW, SCR, WBC A	658817	4067447	663687	4040694	Oregon	1
2006	2597.00	Eleven Point R.	Р	11.4	11.4	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	CDF, LWW, SCR, WBC A	648225	4073793	658817	4067447	Oregon	1
2008	2601.00	Eleven Point R.	Р	22.3	22.3	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	CLF, LWW, SCR, WBC A	626144	4076655	648225	4073793	Oregon	1
2006	1283.00	Elm Branch	С	3.0	3	Mi.	Oxygen, Dissolved (W)	Windsor SE WWTP	AQL	LWW, SCR, WBC B	455777	4264032	453820	4261492	Henry	1
2012	1704.00	Fee Fee (new) Cr.	Р	1.5	1.5	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, WBC B	720606	4290497	718651	4290795	St. Louis	1
2012	1704.00	Fee Fee (new) Cr.	Р	1.5	1.5	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	720606	4290497	718651	4290795	St. Louis	1
2012	7237.00	Fellows Lake	L1	800.0	800	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	DWS, LWW, SCR, WBC A			479590	4129881	Greene	1

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2012	3595.00	Fenton Cr.	Р	0.5	0.5	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	723871	4265426	724548	4265278	St. Louis	1
2012	2186.00	Fishpot Cr.	Р	2.0	2	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, WBC B	715610	4270773	718141	4269480	St. Louis	1
2008	2186.00	Fishpot Cr.	Р	2.0	2	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	715610	4270773	718141	4269480	St. Louis	1
2010	2168.00	Flat River Cr.	С	5.0	9	Mi.	Cadmium (W)	Old Lead Belt tailings	AQL	LWW, WBC B	717606	4190862	719851	4196761	St. Francois	1
2010	7151.00	Forest Lake	L1	573.0	573	Ac.	Chlorophyll-a (W)	Source Unknown	AQL	DWS, LWW, WBC A			529115	4446668	Adair	1
2010	7151.00	Forest Lake	L1	573.0	573	Ac.	Nitrogen, Total (W)	Source Unknown	AQL	DWS, LWW, WBC A			529115	4446668	Adair	1
2010	7151.00	Forest Lake	L1	573.0	573	Ac.	Phosphorus, Total (W)	Source Unknown	AQL	DWS, LWW, WBC A			529115	4446668	Adair	1
2006	747.00	Fowler Cr.	С	6	6	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	567703	4291355	568077	4285216	Boone	1
2012	1842.00	Fox Cr.	Р	7.2	7.2	Mi.	Cause Unknown (W)	Source Unknown	AQL	LWW, WBC B	698961	4266797	702101	4258899	St. Louis	1
2008	38.00	Fox R.	Р	42.0	42.0	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW, SCR	591699	4495650	619878	4469909	Clark	1
2010	7008.00	Fox Valley Lake	L3	89.0	89	Ac.	Phosphorus, Total (W)	Rural NPS	AQL	LWW, SCR, WBC B			604598	4483661	Clark	1
2010	7382.00	Foxboro Lake	L3	22.0	22	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC B			644963	4249580	Franklin	1
2002	7280.00	Frisco Lake	L3	5.0	5	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, WBC B			608340	4201511	Phelps	1
2012	1004.00	Gans Cr.	С	5.5	5.5	Mi.	Escherichia coli (W)	Source Unknown	WBC A	AQL, LWW	562848	4305349	558293	4303466	Boone	1
2002	1455.00	Gasconade R.	Р	249.0	249	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	CLF, DWS, LWW, SCR, WBC A	543610	4120606	626322	4281833	Gasconade/ Wright	1
2006	2184.00	Grand Glaize Cr.	С	4.0	4	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, WBC B	720452	4272251	721016	4270232	St. Louis	1
2010	2184.00	Grand Glaize Cr.	С	4.0	4	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, WBC B	720452	4272251	721016	4270232	St. Louis	1
2002	2184.00	Grand Glaize Cr.	С	4.0	4	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	720452	4272251	721016	4270232	St. Louis	1
2006	593.00	Grand R.	Р	60.0	60	Mi	Escherichia coli (W)	Rural NPS	SCR, WBC B	AQL, DWS, IRR, LWW, WBC A	454151	4399076	490791	4359355	Livingston/ Chariton	1
2008	1712.00	Gravois Cr.	Р	2.0	2	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, WBC B	735409	4269271	737738	4270157	St. Louis	1
2006	1712.00	Gravois Cr.	Р	2.0	2	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	735409	4269271	737738	4270157	St. Louis	2
2006	1713.00	Gravois Cr.	С	4.0	4	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, WBC B	731092	4269825	735409	4269271	St. Louis	1
2006	1713.00	Gravois Cr.	С	4.0	4	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	731092	4269825	735409	4269271	St. Louis	2
2006	1009.00	Grindstone Cr.	С	1.5	1.5	Mi.	Escherichia coli (W)	Runoff from Forest/ Grassland/ Parkland, Rural, Residential Areas, Urban Runoff/ Storm Sewers	WBC A	AQL, LWW	561338	4309123	558770	4308985	Boone	1
2012	97.00	Hays Cr.	С	2.0	2	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	629824	4365290	630115	4368016	Ralls	1

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2010	7152.00	Hazel Creek Lake	L1	151.0	151	Ac.	Chlorophyll-a (W)	Rural NPS	AQL	DWS, LWW, WBC B			531549	4461110	Adair	1
2008	7152.00	Hazel Creek Lake	L1	151.0	151	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	DWS, LWW, WBC B			531549	4461110	Adair	1
2008	848.00	Heath's Cr.	P	21.0	21.0	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	WBC B, LWW	481322	4306311	498371	4308099	Pettis	1
2006	3226.00	Hickory Cr.	Р	4.9	4.9	Mi.	Escherichia coli (W)	Source Unknown	WBC A	AQL, LWW	381771	4079318	377864	4083983	Newton	1
2006	1008.00	Hinkson Cr.	С	18.0	18	Mi.	Escherichia coli (W)	Urban Runoff/Storm Sewers	WBC B	AQL, LWW, SCR	567737	4324918	557336	4308968	Boone	1
2012	1011.00	Hominy Br.	С	1.0	1.0	Mi.	Escherichia coli (W)	Runoff from Forest/ Grassland/ Parkland, Rural, Residential Areas, Urban Runoff/ Storm Sewers	WBC B	AQL, LWW, SCR	561245	4310831	560159	4310810	Boone	1
2010	3169.00	Honey Cr.	Р	16.5	16.5	Mi.	Escherichia coli (W)	Rural NPS runoff	WBC B	AQL, LWW	441807	4098928	423428	4103981	Lawrence	1
2010	3170.00	Honey Cr.	С	2.7	2.7	Mi.	Escherichia coli (W)	Rural NPS runoff	WBC B	AQL, LWW	443604	4095825	441807	4098928	Lawrence	1
2008	1348.00	Horse Cr.	Р	27.7	27.7	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	IRR, LWW, WBC B	404906	4166886	422140	4180187	Cedar	1
2010	1348.00	Horse Cr.	Р	27.7	27.7	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	IRR, LWW, WBC B	404906	4166886	422140	4180187	Cedar	1
2002	7388.00	Hough Park Lake	L3	7.0	7	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, WBC B			571190	4266070	Cole	1
2012	7029.00	Hunnewell Lake	L3	228.0	228	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC B			597510	4395781	Shelby	1
2010	420.00	Indian Cr.	С	3.0	3	Mi.	Chloride (W)	Road/Bridge Runoff, Non- construction	AQL	IND, LWW, WBC A	360619	4311181	364589	4312667	Jackson	1
2002	420.00	Indian Cr.	С	3.0	3	Mi.	Escherichia coli (W)	Leawood, KS WWTP, Urban Runoff/ Storm Sewers	WBC A	AQL, IND, LWW	360619	4311181	364589	4312667	Jackson	1
2012	1946.00	Indian Cr.	Р	1.9	1.9	Mi.	Lead (S)	Doe Run Viburnum Division Lead mine	AQL	LWW, WBC B	668795	4178900	669877	4181454	Washington	1
2012	1946.00	Indian Cr.	Р	1.9	1.9	Mi.	Zinc (S)	Doe Run Viburnum Division Lead mine	AQL	LWW, WBC B	668795	4178900	669877	4181454	Washington	1
2006	3256.00	Indian Cr.	Р	9.7	30.8	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CLF, IRR, LWW, SCR	390079	4072820	959	4065146	Newton/ McDonald	1
2008	7389.00	Indian Creek Lake	L3	192.0	192	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC B			440543	4416535	Livingston	1
2012	3223.00	Jacobs Br.	Р	1.6	1.6	Mi.	Zinc (W)	Tri-State Mining District	AQL	LWW, WBC B	365485	4095649	365847	4097350	Newton	1
2012	3207.00	Jenkins Cr.	Р	2.8	2.8	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, LWW	389301	4103154	386214	4105402	Newton/ Jasper	1
2012	3205.00	Jones Cr.	Р	7.5	7.5	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CLF, LWW	388098	4099356	383685	4107345	Newton/ Jasper	1
2012	3592.00	Kiefer Cr.	Р	1.2	1.2	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, WBC B	713477	4270033	714872	4269554	St. Louis	1

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2010	3592.00	Kiefer Cr.	Р	1.2	1.2	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	713477	4270033	714872	4269554	St. Louis	1
2002	7196.00	Knob Knoster St. Park Lakes**	L3	10.0	10	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, WBC B			449403	4289099	Johnson	1
2012	2171.00	Koen Cr.	С	1.0	1	Mi.	Fish Bioassessments	Source Unknown	AQL	LWW	720083	4193036	719754	4194279	St. Francois	1
2002	7436.00	Lake of the Woods	L3	3.0	3	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, WBC B			565549	4314857	Boone	1
2008	7629.00	Lake of the Woods	U	7.0	7	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	GEN		368609	4317228	368318	4317421	Jackson	1
2010	7054.00	Lake St. Louis	L3	525.0	525	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	WBC B, LWW			694070	4297116	St. Charles	1
2010	7212	Lake Winnebago	L3	350.0	350	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC A			382262	4297476	Cass	1
2006	847.00	Lamine R.	Р	54.0	54	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, IRR, LWW, SCR	504057	4279960	513000	4314568	Morgan/ Cooper	1
1998	3105.00	Lat. #2 Main Ditch	Р	11.5	11.5	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	774308	4075742	773631	4058057	Stoddard	2
2008	3105.00	Lat. #2 Main Ditch	Р	11.5	11.5	Mi.	Temperature, water (W)	Channelization	AQL	LWW, WBC B	774308	4075742	773631	4058057	Stoddard	1
2012	3137.00	Lee Rowe Ditch	С	2.3	6	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	824374	4076890	823414	4073568	Mississippi	1
2002	7020.00	Lewistown Lake	L1	29.0	29	Ac.	Atrazine (W)	Agriculture	DWS	AQL			600674	4439277	Lewis	3
2012	3575.00	Line Cr.	С	7.0	7	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	358974	4343374	360136	4335565	Platte	1
2008	1529.00	Little Beaver Cr.	С	3.4	3.5	Mi.	Sedimentation/Silta tion (S)	Smith Sand and Gravel	AQL	LWW, WBC A	602344	4199334	600304	4195833	Phelps	1
2012	422.00	Little Blue R.	Р	35.1	35.1	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW, SCR	372712	4309261	394909	4340608	Jackson	1
2012	1003.00	Little Bonne Femme Cr.	P	9.0	9	Mi.	Escherichia coli (W)	Source Unknown	WBC B	AQL, LWW	558293	4303466	553350	4296764	Boone	1
2006	1863.00	Little Dry Fk.	Р	1.0	5	Mi.	Oxygen, Dissolved (W)	Rolla SE WWTP	AQL	LWW, SCR, WBC B	613259	4199799	616764	4199780	Phelps	1
2006	1864.00	Little Dry Fk.	С	0.6	4.5	Mi.	Oxygen, Dissolved (W)	Rolla SE WWTP	AQL	LWW, WBC B	612762	4199004	613259	4199799	Phelps	1
2008	1864.00	Little Dry Fk.	С	3.9	4.5	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	612998	4192820	612762	4199004	Phelps	1
2006	1325.00	Little Drywood Cr.	Р	17	17	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	377089	4173190	376737	4191485	Vernon	1
2010	1326.00	Little Drywood Cr.	С	10.0	10	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	379795	4162807	377089	4173190	Barton/ Vernon	1
2010	3279.00	Little Lost Cr.	Р	5.8	5.8	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	362557	4080611	355721	4078287	Newton	1
2006	623.00	Little Medicine Cr.	Р	40.0	40	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	416142	4124179	399901	4114249	Mercer/ Grundy	1
2006	623.00	Little Medicine Cr.	Р	20.0	40	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	421758	4107283	420784	4107591	Mercer/ Grundy	1
2006	1189.00	Little Niangua R.	Р	20.0	43	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	CLF, LWW, SCR, WBC A	499879	4188131	491897	4206840	Dallas/ Camden	1
2008	3652.00	Little Osage R.	С	16.0	16	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	358275	4206134	378073	4204993	Vernon	2

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2012	2229.00	Little Whitewater R.	Р	24.2	24.2	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC A	759232	4159953	782131	4144237	Cape Girardeau/ Bollinger	1
2006	606.00	Locust Cr.	Р	36.4	84	Mi.	Escherichia coli (W)	Rural NPS	SCR, WBC B	AQL, DWS, LWW, WBC B	488070	4492450	485919	4450776	Putnam/ Sullivan	1
2012	2763.00	Logan Cr.	Р	6.1	36.0	Mi.	Lead (S)	Sweetwater Lead Mine/Mill	AQL	LWW, SCR, WBC A	666290	4135270	666157	4127465	Reynolds	1
2006	696.00	Long Branch Cr.	С	2.0	13	Mi.	Oxygen, Dissolved (W)	Atlanta WWTP	AQL	LWW, SCR, WBC B	543322	4416540	543714	4413999	Macon	1
2002	7097.00	Longview Lake	L2	930.0	930	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC A	370767	4304559	372708	4309235	Jackson	1
2006	3278.00	Lost Cr.	Р	8.5	8.5	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CLF, LWW, SCR	365734	4083852	355708	4078281	Newton	1
2006	2814.00	Main Ditch	С	13.0	13.0	Mi.	pH (W)	Poplar Bluff WWTP	AQL	IRR, LWW, WBC B	732515	4068032	728380	4048616	Butler	1
2006	2814.00	Main Ditch	С	13.0	13.0	Mi.	Temperature, water (W)	Channelization	AQL	IRR, LWW, WBC B	732515	4068032	728380	4048616	Butler	1
2012	1709.00	Maline Cr.	С	0.6	0.6	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, SCR, WBC B	741092	4291205	741520	4290480	St. Louis	1
2012	1709.00	Maline Cr.	С	0.6	0.6	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	SCR, WBC B	AQL, LWW, WBC B	741092	4291205	741520	4290480	St. Louis	1
2012	3839.00	Maline Cr.	С	0.5	0.5	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, SCR	741520	4290480	742148	4290141	St. Louis	1
2012	3839.00	Maline Cr.	С	0.5	0.5	Mi.	pH (W)	Source Unknown	AQL	LWW, SCR	741520	4290480	742148	4290141	St. Louis	1
2010	3140.00	Maple Slough Ditch	С	16.0	16	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	820642	4090485	816884	4062825	Mississippi/ New Madrid	1
2002	7033.00	Mark Twain Lake	L2	18600.0	18600	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	DWS, LWW, SCR, WBC A	591225	4370593	616549	4375850	Monroe/ Ralls	1
2006	619.00	Medicine Cr.	Р	36.0	36	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	490930	4451871	490963	4451293	Putnam/ Grundy	1
2010	2183.00	Meramec R.	Р	22.0	22	Mi.	Escherichia coli (W)	Municipal Point Source Discharges, Nonpoint Source	WBC A	AQL, DWS, IND, LWW, SCR	718259	4269400	731938	4252474	St. Louis	1
2008	2183.00	Meramec R.	Р	22.0	22	Mi.	Lead (S)	Old Lead belt tailings	AQL	DWS, IND, LWW, SCR, WBC A	718259	4269400	731938	4252474	St. Louis	1
2008	2185.00	Meramec R.	Р	15.7	26	Mi.	Lead (S)	Old Lead Belt tailings	AQL	CLF, DWS, IND, LWW, SCR, WBC A	707844	4260833	718259	4269400	St. Louis	1
1994	1299.00	Miami Cr.	Р	18	18	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	373089	4239543	382984	4222768	Bates	1
2012	2744.00	Middle Fk. Black R.	Р	2.5	21	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Buick Lead Mine/Mill	AQL	CLF, LWW, WBC A	680284	4163599	682139	4161326	Reynolds	1
2006	468.00	Middle Fk. Grand R.	Р	25.0	25	Mi	Escherichia coli (W)	Rural NPS	WBC A	AQL, IRR, LWW, SCR	385583	4488594	381780	4452480	Worth/ Gentry	1
2010	3262.00	Middle Indian Cr.	С	3.5	3.5	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	400092	4074869	395454	4074061	Newton	1
2010	3263.00	Middle Indian Cr.	Р	2.2	2.2	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	395454	4074061	392652	4075387	Newton	1

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2008	3263.00	Middle Indian Cr.	P	2.2	2.2	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	395462	4074067	392653	4075386	Newton	1
2010	226.00	Missouri R.	Р	179.0	179	Mi.	Escherichia coli (W)	Mult. Pt.& NPS	SCR, WBC B	AQL, DWS, IND, IRR, LWW, WBC B	265813	4496304	360959	4330925	Atchison/ Jackson	1
2012	356.00	Missouri R.	Р	129.0	129	Mi.	Escherichia coli (W)	Mult. Pt.& NPS	SCR, WBC B	AQL, DWS, IND, IRR, LWW, WBC B	360959	4330925	503506	4351395	Jackson/ Saline	1
2008	1604.00	Missouri R.	Р	100.0	100	Mi.	Escherichia coli (W)	Mult. Pt.& NPS	WBC B	AQL, DWS, IND, IRR, LWW, SCR	626315	4281840	749978	4300141	Gasconade/ St. Charles	1
2010	7402.00	Mozingo Lake	L1	1000.0	1000	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	DWS, LWW, SCR, WBC B, GEN			348772	4467994	Nodaway	1
2006	853.00	Muddy Cr.	Р	1.8	1.8	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	475958	4289290	476153	4291478	Pettis	1
2008	853.00	Muddy Cr.	Р	62.2	62.2	Mi.	Chloride (W)	Sedalia Central WWTP	AQL	LWW, WBC B	458158	4281745	495118	4299761	Pettis	1
2006	674.00	Mussel Fork Cr.	С	29.0	29	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, DWS, LWW	509540	4450629	513876	4410414	Sullivan/ Macon	1
2006	1170.00	Niangua R.	Р	51.0	51	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CLF, LWW, SCR	507120	4144342	512204	4176323	Webster/ Dallas	1
2006	550.00	No Cr.	Р	22.5	22.5	Mi	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	461943	4447521	451265	4415426	Grundy/ Livingston	1
2010	550.00	No Cr.	Р	22.5	22.5	Mi	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	461943	4447521	451265	4415426	Grundy/ Livingston	1
2002	7316.00	Noblett Lake	L3	26.0	26	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, WBC A			579891	4085042	Douglas	1
2010	279.00	Nodaway R.	Р	60.0	60	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, IRR, LWW, SCR	328881	4493644	331843	4418710	Nodaway	1
2010	7109.00	North Bethany Lake	L3	78.0	78	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC			412397	4463019	Harrison	1
2006	170.00	North Fk. Cuivre R.	С	8	8	Mi.	Fecal Coliform (W)	Source Unknown	WBC B	AQL, LWW	651684	4345260	656761	4337088	Pike	1
2006	170.00	North Fk. Cuivre R.	С	8	8	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	651684	4345260	656761	4337088	Pike	1
2008	3186.00	North Fk. Spring R.	Р	17.4	17.4	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW, SCR	379528	4128246	363876	4125768	Barton	1
2006	3188.00	North Fk. Spring R.	С	1.1	55.9	Mi.	Ammonia, Total	Lamar WWTP	AQL	LWW, SCR, WBC B	385711	4149177	387025	4148244	Barton	1
2008	3188.00	North Fk. Spring R.	С	55.9	55.9	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW, SCR	408711	4131507	379528	4128246	Dade/Jasper	1
2006	3188.00	North Fk. Spring R.	С	55.9	55.9	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, SCR, WBC B	408711	4131507	379528	4128246	Dade/Jasper	1
2008	3260.00	North Indian Cr.	Р	5.2	5.2	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	395484	4077534	390079	4072820	Newton	1
2008	3260.00	North Indian Cr.	Р	5.0	5	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	395484	4077534	390079	4072820	Newton	1
2010	1293.00	Osage R.	Р	39.3	39.3	Mi.	Oxygen, Dissolved (W)	Source Unknown	***	***	453701	4183192	444285	4187603	Vernon/St. Clair	1
2006	1373.00	Panther Cr.	С	7.8	7.8	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	482169	4115647	482554	4113028	St. Clair/ Polk	1

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2006	2373.00	Pearson Cr.	Р	8.0	8	Mi.	Escherichia coli (W)	Livestock,Grazing or Feeding Operations, Urban Runoff/Storm Sewers	WBC A	AQL, LWW	486616	4121330	482572	4113046	Greene	1
2008	7628	Perry Phillips Lake	U	32.0	32	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	GEN				561277	4305658	Boone	1
2012	215.00	Peruque Cr.	P1	9.6	9.6	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, SCR, WBC B	700330	4301725	704083	4307876	St. Charles	1
2012	216.00	Peruque Cr.	Р	0.3	10.3	Mi.	Cause Unknown (W)	Lake St. Louis Dam	AQL	LWW, SCR, WBC B	693935	4297184	694195	4297616	St. Charles	1
2006	1755.00	Pickle Cr.	Р	7.0	7	Mi.	pH (W)	Atmospheric Deposition - Acidity	AQL	LWW, WBC B	731000	4068596	732525	4068037	Ste. Genevieve	1
2010	2815.00	Pike Cr.	С	6.0	6.0	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	IRR, LWW	727565	4074153	732501	4058040	Butler	1
2010	312.00	Platte R.	Р	138.0	138	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, DWS, IRR, LWW, SCR			471911	4194812	Worth/Platte	1
2012	1327	Pleasant Run Cr.	С	7.6	7.6	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	381361	4169526	376904	4174683	Vernon	1
2006	3120.00	Pole Cat Slough	Р	12	12	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	599821	4447806	599813	4448472	Dunklin	1
2006	2038.00	Red Oak Cr.	С	10.0	10	Mi.	Oxygen, Dissolved (W)	Owensville WWTP	AQL	LWW, WBC B	631421	4239857	642012	4246718	Gasconade	1
2006	1710.00	River des Peres	С	2.6	2.6	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, SCR	736570	4271519	738742	4268522	St. Louis	1,4
2012	1710.00	River des Peres	С	2.6	2.6	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	SCR	AQL, LWW	736570	4271519	738742	4268522	St. Louis	1,4
2012	3827.00	River des Peres	Р	3.7	3.7	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, SCR	733742	4275819	736561	4271521	St. Louis	1,5
2012	3827.00	River des Peres	Р	3.7	3.7	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	SCR	AQL, LWW	733742	4275819	736561	4271521	St. Louis	1,5
2010	594.00	Salt Cr.	С	14.0	14.0	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	608375	4201573	608199	4201593	Livingston/ Chariton	1
2012	2113.00	Salt Pine Creek	С	1.2	1.2	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Barite tailings pond	AQL	LWW, WBC B	698660	4214456	697844	2216040	St. Francois	1
2008	91.00	Salt R.	Р	29.0	29	Mi.	Oxygen, Dissolved (W)	Mark Twain Lake re-regulation dam	AQL	DWS, IRR, LWW, SCR, WBC A	703641	4150936	704394	4150521	Ralls/Pike	1
2002	103.00	Salt R.	P1	9.3	9.3	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	DWS, IRR, LWW, SCR, WBC A	616571	4375863	622770	4380468	Ralls	1,6
2006	2170.00	Shaw Branch	С	2.0	2	Mi.	Cadmium (S)	Federal tailings	AQL	LWW, WBC B	718516	4190248	718461	4191840	St. Francois	1
2008	3222.00	Shoal Cr.	Р	41.1	41.1	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CLF, DWS, IND, IRR, LWW, SCR	402084	4083441	356113	4099770	Newton	1
2006	399.00	Sni-a-bar Cr.	Р	32	32	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, SCR, WBC B	398862	4311016	416458	4333099	Jackson/ Lafayette	1
2006	655.00	South Blackbird Cr.	С	5	13	Mi.	Ammonia, Un- ionized (W)	Source Unknown	AQL	LWW, WBC B	503697	4475340	518720	4469744	Putnam	2
2010	71.00	South Fabius R.	Р	80.6	80.6	Mi.	Escherichia coli (W)	Nonpoint Source	WBC B	AQL, IRR, LWW	572794	4444457	627750	4417637	Knox/Marion	1
1994	142.00	South Fk. Salt R.	С	20.1	32	Mi.	Oxygen, Dissolved (W)	Mexico WWTP, Source Unknown	AQL	LWW, SCR, WBC B	420412	4108671	356381	4117687	Callaway/ Audrain	1
2006	1249.00	South Grand R.	Р	62.5	62.5	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW, SCR	425548	4101756	420412	4108671	Cass/Henry	1

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2012	3259.00	South Indian Cr.	Р	8.7	8.7	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	CDF, LWW, WBC B	399208	4067538	390081	4072821	McDonald/ Newton	1
2008	3259.00	South Indian Cr.	Р	8.7	8.7	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, CDF, LWW	399215	4067527	390079	4072820	Newton/ McDonald	1
2012	224.00	Spencer Cr.	С	1.5	1.5	Mi.	Chloride (W)	St. Peters WWTP, Urban Runoff/ Storm Sewers	AQL	LWW	708197	4298108	709436	4300127	St. Charles	1
2006	3160.00	Spring R.	С	61.7	61.7	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CLF, IND, IRR, LWW, SCR	420404	4108681	356391	4117697	Lawrence/ Jasper	1
2010	3164.00	Spring R.	Р	8.8	8.8	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CDF, IND, IRR, LWW, SCR	425938	4100912	420404	4108681	Lawrence	1
2010	3165.00	Spring R.	Р	11.9	11.9	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, LWW, SCR	430995	4088419	425938	4100912	Lawrence	1
2012	2835.00	St. Francis R.	Р	8.4	93.1	Mi.	Temperature, water (W)	Source Unknown	CLF	AQL, IRR, LWW, SCR, WBC A	725328	4181265	728433	4173620	St. Francois	1
2006	3138.00	St. John's Ditch	Р	15.3	15.3	Mi.	Escherichia coli (W)	Rural NPS, Urban Runoff/Storm Sewers	WBC B	AQL, LWW, SCR	807942	4079151	817829	4057594	New Madrid	1
2006	3138.00	St. John's Ditch	Р	15.3	15.3	Mi.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC B	807942	4079151	817829	4057594	New Madrid	1
2006	3135.00	Stevenson Bayou	С	14	14	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	513037	4255157	513136	4258619	Mississippi	1
2006	959.00	Straight Fk.	С	2.5	6	Mi.	Oxygen, Dissolved (W)	Versailles WWTP	AQL	LWW, WBC B	513047	4255147	514144	4263031	Morgan	1
2008	2751.00	Strother Cr.	Р	6.0	6.0	Mi.	Lead (S)	Buick Lead Mine/Mill	AQL	CLF, LWW, WBC B	672405	4162651	680284	4163599	Iron	1
2010	2751.00	Strother Cr.	Р	6.0	6.0	Mi.	Lead (W)	Buick Lead Mine/Mill	AQL	CLF, LWW, WBC	672405	4162651	680284	4163599	Iron	1
2008	2751.00	Strother Cr.	Р	6.0	6.0	Mi.	Nickel (S)	Buick Lead Mine/Mill	AQL	CLF, LWW, WBC B	672405	4162651	680284	4163599	Iron	1
2006	2751.00	Strother Cr.	Р	6.0	6.0	Mi.	Zinc (S)	Buick Lead Mine/Mill	AQL	CLF, LWW, WBC B	672405	4162651	680284	4163599	Iron	1
2010	2751.00	Strother Cr.	Р	6.0	6.0	Mi.	Zinc (W)	Buick Lead Mine/Mill	AQL	CLF, LWW, WBC B	672405	4162651	680284	4163599	Iron	1
2008	3965.00	Strother Cr.	U	0.9	n/a	Mi.	Arsenic (S)	Buick Lead Mine/Mill	GEN		671138	4161740	672405	4162651	Reynolds/ Iron	1
2008	3965.00	Strother Cr.	U	0.9	n/a	Mi.	Lead (S)	Buick Lead Mine/Mill	GEN		671138	4161740	672405	4162651	Reynolds/ Iron	1
2008	3965.00	Strother Cr.	U	0.9	n/a	Mi.	Nickel (S)	Buick Lead Mine/Mill	GEN		671138	4161740	672405	4162651	Reynolds/ Iron	1
2006	3965.00	Strother Cr.	U	0.9	n/a	Mi.	Zinc (S)	Buick Lead Mine/Mill	GEN		671138	4161740	672405	4162651	Reynolds/ Iron	1
2012	3965.00	Strother Cr.	U	0.9	n/a	Mi.	Zinc (W)	Buick Lead Mine/Mill	GEN		671138	4161740	672405	4162651	Reynolds/ Iron	1
2006	686.00	Sugar Cr.	Р	6.8	6.8	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	544663	4369674	538226	4368067	Randolph	1
2006	7399.00	Sunset Lake	L3	6.0	6	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, WBC B			569912	4268414	Cole	1
2010	7313.00	Table Rock Lake, White River Arm	L2	17240.0	17240	Ac.	Chlorophyll (W)	Mult. Pt.& NPS	AQL	WBC A,LWW,SCR			472162	4050084	Barry/Taney	1

Year First Listed	WBID	Water Body Name	Class	MDNR Proposed Impairment Size	MDNR Water Body Size	Size Units	Pollutant	Source	Impaired Uses	Other (Unimpaired) Uses	Upstream X (UTM)	Upstream Y (UTM)	Downstream X (UTM)	Downstream Y (UTM)	County Upstream/ Downstream	Comment
2010	7313.00	Table Rock Lake, White River Arm	L2	17240.0	17240	Ac.	Nitrogen (W)	Mult. Pt.& NPS	AQL	WBC A,LWW,SCR			472162	4050084	Barry/Taney	1
2002	7313.00	Table Rock Lake, James, Kings and Long Cr. Arms	L2	24507.0	24507	Ac.	Nutrient/Eutrophica tion Biol. Indicators (W)	Mult. Pt.& NPS	AQL	WBC A,LWW,SCR					Barry/ Taney/Stone	2
2010	7297.00	Terre Du Lac Lakes ****	L3	103.0	103	Ac.	Chlorophyll-a (W)	Terre du Lac Subdivision	AQL	LWW, SCR, WBC A			708556	4197147	St. Francois	1
2010	7297.00	Terre Du Lac Lakes ****	L3	103.0	103	Ac.	Nitrogen, Total (W)	Terre du Lac Subdivision	AQL	LWW, SCR, WBC			708556	4197147	St. Francois	1
2008	549.00	Thompson R.	Р	5.0	65	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, DWS, IRR, LWW	432197	4492099	430910	4488381	Harrison	1
2012	3243.00	Thurman Cr.	Р	3.0	3	Mi.	Escherichia coli (W)	Rural and suburban NPS	WBC B	AQL, LWW,	369320	4099003	367466	4097251	Newton	1
2012	3763.00	Tiff Cr.	Р	2.1	2.1	Mi.	Fishes Bioassessments (W)	Source Unknown	AQL	LWW, WBC B	710827	4212454	708999	4214898	Jefferson	1
2006	1225.00	Trib. To Big Otter Cr.	С	1.0	1	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	437064	4228845	436283	4229898	Henry	1
2012	3963.00	Trib. To Chat Cr.	U	0.9	0.9	Mi.	Cadmium (W)	Baldwin Park mine	GEN		437568	4092534	436376	4092428	Lawrence	1
2010	3963.00	Trib. To Chat Cr.	U	0.9	0.9	Mi.	Zinc (W)	Baldwin Park mine	GEN		437568	4092534	436376	4092428	Lawrence	1
2010	133.00	Trib. To Coon Cr.	С	1.0	1	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	552191	4364085	554306	4364133	Randolph	2
2010	3938.00	Trib. To Flat River Cr.	U	0.3	0.3	Mi.	Zinc (W)	Mill tailings (Aban.)	AQL		717159	4191123	717606	4190862	St. Francois	1
2008	3943.00	Trib. To Foster Br.	U	0.7	2.0	Mi.	Ammonia, Un- ionized (W)	Ashland WWTP	GEN		564699	4290776	656255	4290007	Boone	1
2010	1420.00	Trib. To Goose Cr.	С	3.0	3.0	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	437632	4110212	440716	4112975	Lawrence	1
2006	3490.00	Trib. To Little Muddy Cr.	С	1.0	1.0	Mi.	Chloride (W)	Tyson Foods	AQL	LWW, WBC B	473619	4290956	474708	4291636	Pettis	1
2010	2114.00	Trib. To Old Mines Cr.	С	1.5	1.5	Mi.	Sedimentation/Silta tion (S)	Barite tailings pond	GEN	AQL, LWW, WBC B	699698	4215167	698464	4216954	St. Francois	1
2006	3360.00	Trib. To Red Oak Cr.	С	0.5	0.5	Mi.	Oxygen, Dissolved (W)	Owensville WWTP	AQL	LWW, WBC B	635584	4245145	636294	4244763	Gasconade	1
2006	3361.00	Trib. To Red Oak Cr.	С	1.1	1.9	Mi.	Oxygen, Dissolved (W)	Nonpoint Source	AQL	LWW	632991	4245779	634496	4245415	Gasconade	1
2006	3361.00	Trib. To Red Oak Cr.	С	0.8	1.9	Mi.	Oxygen, Dissolved (W)	Owensville WWTP	AQL	LWW	634496	4245415	635584	4245145	Gasconade	1
2006	956.00	Trib. To Willow Fk.	С	0.5	0.5	Mi.	Low D.O. (W)	Unknown	AQL	LWW	520023	4276037	520579	4275437	Moniteau	1
2006	3589.00	Trib. To Wolf Cr.	С	1.5	1.5	Mi.	Low D.O. (W)	Unknown	AQL	LWW, WBC B	727179	4185393	729121	4184286	St. Francois	2
2006	74.00	Troublesome Cr.	С	6.1	41.3	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, SCR, WBC B	366140	4107715	586188	4437669	Knox	1
2006	74.00	Troublesome Cr.	С	35.3	41.3	Mi.	Unknown	Unknown	AQL	WBC B,LWW	586188	4437669	356267	4109953	Knox/Marion	1
2012	751.00	Turkey Cr.	С	6.3	6.3	Mi	Escherichia coli (W)	Source Unknown	WBC A	AQL, LWW	565466	4300840	560347	4298778	Boone	1
2006	3216.00	Turkey Cr.	Р	7.7	7.7	Mi.	Cadmium (S)	Tri-State Mining District	AQL	LWW, WBC B	366127	4107718	356268	4109958	Jasper	1

Year First Listed	WBID	Water Body Name	Class	MDNR Proposed Impairment Size	MDNR Water Body Size	Size Units	Pollutant	Source	Impaired Uses	Other (Unimpaired) Uses	Upstream X (UTM)	Upstream Y (UTM)	Downstream X (UTM)	Downstream Y (UTM)	County Upstream/ Downstream	Comment
2006	3216.00	Turkey Cr.	Р	7.7	7.7	Mi.	Cadmium (W)	Tri-State Mining District	AQL	LWW, WBC B	366127	4107718	356268	4109958	Jasper	1
2006	3216.00	Turkey Cr.	Р	7.7	7.7	Mi.	Escherichia coli (W)	Rural and suburban NPS	WBC B	AQL, LWW	366127	4107718	356268	4109958	Jasper	1
2008	3216.00	Turkey Cr.	Р	7.7	7.7	Mi.	Lead (S)	Tri-State Mining District	AQL	LWW, WBC B	366127	4107718	356268	4109958	Jasper	1
2008	3216.00	Turkey Cr.	Р	7.7	7.7	Mi.	Zinc (S)	Tri-State Mining District	AQL	LWW, WBC B	366127	4107718	356268	4109958	Jasper	1
2008	3217.00	Turkey Cr.	Р	6.1	6.1	Mi.	Cadmium (S)	Tri-State Mining District	AQL	LWW, WBC A	373131	4104203	366127	4107718	Jasper	1
2008	3217.00	Turkey Cr.	Р	6.1	6.1	Mi.	Escherichia coli (W)	Rural and suburban NPS	WBC A	AQL, LWW	373131	4104203	366127	4107718	Jasper	1
2008	3217.00	Turkey Cr.	Р	6.1	6.1	Mi.	Lead (S)	Tri-State Mining District	AQL	LWW, WBC A	373131	4104203	366127	4107718	Jasper	1
2008	3217.00	Turkey Cr.	Р	6.1	6.1	Mi.	Zinc (S)	Tri-State Mining District	AQL	LWW, WBC A	373131	4104203	366127	4107718	Jasper	1
2006	3282.00	Turkey Cr.	Р	2.4	2.4	Mi.	Cadmium (W)	Bonne Terre chat pile	AQL	LWW, WBC B	715483	4200142	714627	4203617	St. Francois	1
2006	3282.00	Turkey Cr.	Р	2.4	2.4	Mi.	Lead (W)	Bonne Terre chat pile	AQL	LWW, WBC B	715483	4200142	714627	4203617	St. Francois	1
2006	3282.00	Turkey Cr.	Р	1.2	2.4	Mi.	Zinc (W)	Bonne Terre chat pile	AQL	LWW, WBC B	715072	4201822	714627	4203617	St. Francois	1
2010	1414.00	Turnback Cr.	Р	14.0	14.0	Mi.	Escherichia coli	Rural NPS	WBC A	AQL, CDF, LWW, SCR	742611	4165654	739596	4162978	Lawrence/ Dade	1
2006	2579.00	Warm Fk. Spring R.	Р	13.8	13.8	Mi.	Fecal Coliform (W)	Source Unknown	WBC A	AQL, IRR, LWW, SCR	627786	4054476	631872	4040311	Oregon	1
2006	1708.00	Watkins Cr.	С	3.5	3.5	Mi.	Chloride (W)	Urban Runoff/ Storm Sewers	AQL	LWW, WBC B	744098	4294786	745384	4295397	St. Louis	1
2006	1708.00	Watkins Cr.	С	3.5	3.5	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	744098	4294786	745384	4295397	St. Louis	1
2012	1708.00	Watkins Cr.	С	3.5	3.5	Mi.	pH (W)	Urban Runoff/ Storm Sewers	AQL	LWW, WBC B	744098	4294786	745384	4295397	St. Louis	1
2010	7071.00	Weatherby Lake	L3	194.0	194	Ac.	Chlorophyll-a (W)	Urban Runoff/ Storm Sewers	AQL	LWW, SCR, WBC			363437	4175258	Platte	1
2010	7071.00	Weatherby Lake	L3	194.0	194	Ac.	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	AQL	LWW, SCR, WBC	357388	4172186	363437	4175258	Platte	1
2010	7071.00	Weatherby Lake	L3	194.0	194	Ac.	Nitrogen, Total (W)	Urban Runoff/ Storm Sewers	AQL	LWW, SCR, WBC			363437	4175258	Platte	1
	560.00	Weldon R.	Р	42	42	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	477268	4461711	481600	4443207	Mercer/ Grundy	1
2006	2755.00	West Fk. Black R.	Р	2.1	32.3	Mi.	Lead (S)	West Fork Mine	AQL	CLF, LWW, WBC	667316	4150995	669771	4151594	Reynolds	1
2008	2755.00	West Fk. Black R.	Р	2.1	32.3	Mi.	Nickel (S)	West Fork Lead Mine/Mill	AQL	CLF, LWW, WBC	667316	4150995	669771	4151594	Reynolds	1
2008	1317.00	West Fk. Drywood Cr.	С	8.1	8.1	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW, WBC B	357342	4172200	363431	4175253	Vernon	1
2006	613.00	West Fk. Locust Cr.	С	17.0	17	Mi.	Cause Unknown (W)	Source Unknown	AQL	LWW	477260	4461711	481625	4443186	Sullivan	1
2002	613.00	West Fk. Locust Cr.	С	17.0	17	Mi.	Oxygen, Dissolved (W)	Source Unknown	AQL	LWW	477260	4461711	481625	4443186	Sullivan	1
2010	1504.00	Whetstone Cr.	Р	12.2	12.2	Mi.	Oxygen, Dissolved (W)	Livestock,Grazing or Feeding Operations	AQL	CLF, LWW, WBC B	556421	4116033	554003	4128699	Wright	1
2008	3182.00	White Oak Cr.	С	18.0	18	Mi.	Escherichia coli (W)	Rural NPS runoff	WBC A	AQL, IRR, LWW	415910	4124129	396445	4113579	Lawrence/ Jasper	1

Year First Listed	WBID	Water Body Name	Class	MDNR Proposed Impairment Size	MDNR Water Body Size	Size Units	Pollutant	Source	Impaired Uses	Other (Unimpaired) Uses	Upstream X (UTM)	Upstream Y (UTM)	Downstream X (UTM)	Downstream Y (UTM)	County Upstream/ Downstream	Comment
2010	1700.00	Wildhorse Cr.	С	3.9	3.9	Mi.	Escherichia coli (W)	Runoff from Forest/ Grassland/ Parkland, Rural, Residential Areas	WBC B	AQL, LWW	699014	4276142	699385	4279854	St. Louis	1
2012	3171.00	Williams Cr.	Р	1.0	1	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, CDF, LWW	421762	4107279	420777	4107590	Lawrence	1
2010	3172.00	Williams Cr.	Р	8.5	8.5	Mi.	Aquatic Macroinvertebrate Bioassessments (W)	Source Unknown	AQL	LWW, WBC A	432043	4105528	421762	4107279	Lawrence	1
2010	3172.00	Williams Cr.	Р	8.5	8.5	Mi.	Escherichia coli (W)	Rural NPS	WBC A	AQL, LWW	432043	4105528	421762	4107279	Lawrence	1
2010	3594.00	Williams Cr.	Р	1.0	1.0	Mi.	Escherichia coli (W)	Urban Runoff/ Storm Sewers	WBC B	AQL, LWW	716794	4268174	716670	4269283	St. Louis	1
2012	3594.00	Williams Cr.	Р	1.0	1.0	Mi.	pH (W)	Source Unknown	AQL	LWW, WBC B	716794	4268174	716670	4269283	St. Louis	1
2012	3280.00	Willow Br.	Р	2.2	2.2	Mi.	Escherichia coli (W)	Rural NPS	WBC B	AQL, LWW	366145	4086268	364029	4084118	Newton	1
2010	955.00	Willow Fk.	С	6.5	6.5	Mi.	Oxygen, Dissolved (W)	Tipton WWTP, Source Unknown	AQL	LWW, WBC B	515568	4276519	522993	4273677	Moniteau	1
2006	2375.00	Wilsons Cr.	Р	11.9	14	Mi.	Escherichia coli (W)	Nonpoint Source	WBC B	AQL, LWW	468505	4116821	464369	4102522	Greene/ Christian	1

Comments

- 1. 2012 Assessment indicates impairment.
- 2. Insufficient cause to delist.
- 3. Assessed as unimpaired; expected to be retained by EPA.
- 4. Previously listed as WBID 1711.
- 5. Previously listed as WBID 1711U.
- 6. Previously listed erroneously as WBID 0091.

<u>Uses:</u> AQL=Aquatic Life Protection, WBC A & WBC B=Whole Body Contact Recreation, DWS=Drinking Water Supply, LWW=Livestock and Wildlife Watering, SCR=Secondary Contact Recreation, IRR=Irrigation, IND=Industrial Uses

^{*}Misidentified in Water Quality Standards as Bowling Green New Lake. Acres shown on list are the actual acres.

^{**} Lake Buteo is the only one of the Knob Noster S. P. Lakes on this list.

^{***}This section of the Osage River inadvertently left out of Water Quality Standards, thus there are no designated beneficial uses.

^{****}Lac Capri is the only one of the Terre du Lac Lakes on the list.

Table 15. Other Waters Rated As Impaired and Believed to Be Impaired

The following list includes other classified waters in Missouri found to be impaired both by applying the Methodology for the Development of the 2012 Section 303(d) List in Missouri and the best professional judgment of the department. Included in this list are waters with approved TMDLs, waters where sufficient pollution control measures are in place, waters which are impaired by measures other than discrete pollutants, and other waters which were not approved for 303(d) listing by the Clean Water Commission.

		Size			
Waterbody Name	WBID	(Miles)	County	Pollutant	Source
Big Bottom Cr.	1746	0.6	Ste. Genevieve	Ammonia	Lake Forest Estates WWTF
Big Bottom Cr.	1746	1.5	Ste. Genevieve	Low D.O.	Lake Forest Estates WWTF
Big Cr., Trib.	3940U	0.6	Iron	Cadmium	Glover smelter
Big Cr., Trib.	3940U	0.6	Iron	Zinc	Glover smelter
Big R.	2074	55.6	Jefferson	Lead(S&T)	Mill tailings (Aban.)
Brushy Cr.	1592	3.1	Texas	Low D.O.	Houston WWTP
Buffalo Ditch	3118	17.3	Dunklin	Low D.O.	Unknown
Chariton R.	640	111	Putnam/Chariton	Bacteria	Rural NPS
Dry Auglaize Cr.	1145	1	Laclede	Low D.O.	Unknown
Dry Auglaize Cr.	1145	3	Laclede	Unknown	Unknown
E. Brush Cr.	811	1.1	Moniteau	Low D.O.	California N WWTF
E. Fk. Black R.	2737	0.5	Reynolds	Hydromod.	Impoundment
E. Whetstone Cr.	3964U	0.3	Wright	Ammonia	Mountain Grove E WWTP
			-		Montgomery City NE
Elkhorn Cr.	189	17.6	Montgomery	Low D.O.	WWTP
Gabriel Cr.	883	13.6	Morgan	Low D.O.	Stover NW, SW WWTPs
Grand R.	430	8	Gentry	Aq. Habitat	Channelization
Hinkson Cr.	1007	7.6	Boone	Unknown	Urban NPS
Hinkson Cr.	1008	18.8	Boone	Bacteria	Urban NPS
Hinkson Cr.	1008	6.8	Boone	Unknown	Urban NPS
Indian Cr., Trib.	3663	0.3	Washington	Lead	Viburnum Mine
	•		~1	-	Eminence WWTP/X-
Jacks Fk.	2681	7.5	Shannon	Bacteria	Country TR
Jordan Cr.	3374	2	Greene	Unknown	Unknown
Joyce Cr.	3233	4.5	Barry	Bacteria	Rural NPS
L. Lindley Cr.	1438	3.7	Dallas	Unknown	Unknown
L. Sac R.	1381	36.9	Greene/Polk	Bacteria	Urban/Rural NPS
Long Br.	857	6	Pettis/Johnson	Low D.O.	Unknown
Long Br.	857	6	Pettis/Johnson	Unknown	Unknown
Marmaton R.	1308	35.7	Vernon	Low D.O.	Rural NPS
McKenzie Cr.	2786	6.3	Wayne	Low D.O.	Piedmont WWTF
McKenzie Cr.	2787	4.7	Wayne	Low pH	Natural, Gads Hill Quarry
M. Fk. Tebo Cr.	1284	3	Henry	SO4+Cl	Coal AML
M. Fk. Tebo Cr., Trib.	1288	3.1	Henry	pН	Coal AML
M. Fk. Tebo Cr., Trib.	1288	3.1	Henry	SO4+Cl	Coal AML
Monegaw Cr.	1234	2.1	St. Clair	SO4+Cl	Coal AML
Mound Branch	1300	8.9	Bates	Low D.O.	Unknown
N. Fabius R.	56	13.2	Clark/Lewis	Aq. Habitat	Channelization
N. Moreau Cr.	942	10.9	Moniteau	Low D.O.	Unknown
Piper Cr.	1444	5.3	Polk	Unknown	Unknown

		Size			
Waterbody Name	WBID	(Miles)	County	Pollutant	Source
Pogue Cr.	3232	2.5	Barry	Bacteria	Rural NPS
				Inorganic	
Pond Cr.	2128	1	Washington	Sediment	Barite AML
Saline Cr.	2859	1.7	Madison	Nickel (W)	Madison Mine
Sandy Cr.	652	3	Putnam	Unknown	Unknown
Second Nicolson Cr.	1319	4.5	Barton	SO4+C1	Coal AML
Shibboleth Br.	2120	3	Washington	Lead	Mill tailings (Aban.)
Shoal Cr.	3230	15.7	Barry/Newton	Bacteria	Rural NPS
Spring Cr.	1870	5.1	Dent	Low D.O.	Salem WWTF
				Organic	
Spring Cr.	1870	5.1	Dent	Sediment	Salem WWTF
Stinson Cr.	710	1.9	Callaway	Org. Sediment	Fulton WWTP
Stinson Cr.	710	1.9	Callaway	Low D.O.	Unknown
Town Br.	3822	2.5	Polk	Unknown	Unknown
				Organic	
Town Br.	3822	1.1	Polk	Sediment	Bolivar WWTP
Trace Cr.	2850	0.4	Madison	Low pH	Natural
				Inorganic	
Village Cr.	2863	1.9	Madison	Sediment	Mill tailings (Aban.)
Village Cr.	2863	1.9	Madison	Lead	Mill tailings (Aban.)
Village Cr.	2864	3	Madison	Lead	Mill tailings (Aban.)

Table 16. Other Potentially Impaired Waters

The following waters are those for which there is some indication that an impairment to some designated use may exist, but the current data or information indicating the impairment do not meet the data requirements set out by Missouri's Section 303(d) Listing Methodology. The Department will make an effort to conduct further monitoring on these waters in order to determine defensibly whether these impairments actually exist.

A large number of these potential impairments are ascribed to rural nonpoint sources. However, it should be noted that some of these problems, particularly low dissolved oxygen levels, might be due to natural conditions of the waters that are incompletely understood at this time. The department is currently studying baseline dissolved oxygen levels in small streams in regions of concern, which will help in the future to better distinguish natural stream conditions from anthropogenic impairments.

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
Ackerman Ditch	2809	14.10	Mi.	Habitat Degradation
Agee Cr.	334	4.80	Mi.	Habitat Degradation
Arapahoe Cr.	282	8.00	Mi.	Habitat Degradation
Barren Fk.	2656	2.00	Mi.	Habitat Degradation
Bean Br.	148	8.70	Mi.	Habitat Degradation
Bear Cr.	193	16.10	Mi.	Habitat Degradation
Bear Cr.	272	9.80	Mi.	Habitat Degradation
Bear Cr.	416	4.50	Mi.	Habitat Degradation
Bear Cr.	1015	6.00	Mi.	Habitat Degradation
Beaver Br.	3266	3.50	Mi.	Zinc (Sediment)
Beaver Br.	3267	1.50	Mi.	Zinc (Sediment)
Beaver Cr.	1509	5.70	Mi.	Unknown (Biological Data)
Beaver Dam Cr.	145	5.00	Mi.	Habitat Degradation
Bee Cr.	137	5.80	Mi.	Habitat Degradation
Bee Cr.	273	29.40	Mi.	Habitat Degradation
Bee Cr., Trib.	274	1.80	Mi.	Habitat Degradation
Bee Cr., Trib.	3967	0.50	Mi.	Habitat Degradation
Bee Tree Lake	7309	10.00	Ac.	Mercury (Fish Tissue)
Beef Br.	3224	2.50	Mi.	Cadmium, Zinc (Sediment)
Belleau Cr.	2179	5.10	Mi.	Habitat Degradation
Big Cr.	205	10.30	Mi.	Habitat Degradation
Big Cr.	207	17.70	Mi.	Habitat Degradation
Big Cr.	2647	23.00	Mi.	Habitat Degradation
Big Cr., Trib.	2674	3.00	Mi.	Habitat Degradation
Big Cr., Trib.	2923	1.00	Mi.	Habitat Degradation
Big Lead Cr.	180	5.00	Mi.	Habitat Degradation
Big Muddy Cr.	461	10.20	Mi.	Habitat Degradation
Big Muddy Cr.	462	10.90	Mi.	Habitat Degradation
Big Muddy Cr.	441	12.00	Mi.	Habitat Degradation
Big Rock Cr.	464	3.70	Mi.	Habitat Degradation
Big Rock Cr.	465	5.90	Mi.	Habitat Degradation
Billy Cr.	659	5.00	Mi.	Habitat Degradation
Billy's Br.	124	11.50	Mi.	Habitat Degradation
Black Cr.	112	21.80	Mi.	Habitat Degradation
Black River Ditch	2807	11.10	Mi.	Habitat Degradation
Blackwater R.	891	79.40	Mi.	Atrazine, Sediment

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
Brazil Cr.	1983	13.90	Mi.	Unknown (Biological Data)
Bridge Cr.	66	8.40	Mi.	Habitat Degradation
Bridge Cr.	70	27.00	Mi.	Habitat Degradation
Brush Cr.	192	7.80	Mi.	Habitat Degradation
Brush Cr.	107	3.40	Mi.	Habitat Degradation
Brush Cr.	276	7.40	Mi.	Habitat Degradation
Brush Cr.	408	5.90	Mi.	Habitat Degradation
Brushy Cr.	3785	0.50	Mi.	Habitat Degradation
Brushy Cr.	336	11.00	Mi.	Habitat Degradation
Brushy Cr.	377	7.00	Mi.	Habitat Degradation
Brushy Cr.	395	2.00	Mi.	Habitat Degradation
Brushy Cr.	438	5.00	Mi.	Habitat Degradation
Brushy Cr.	531	5.00	Mi.	Habitat Degradation
Brushy Cr.	69	4.50	Mi.	Habitat Degradation
Brushy Cr.	167	3.00	Mi.	Habitat Degradation
Bullskin Cr.	3264	4.90	Mi.	Habitat Degradation
Burr Oak Cr.	363	2.00	Mi.	Habitat Degradation
Butcher Cr.	203	1.00	Mi.	Habitat Degradation
Callaway Fk.	1606	4.50	Mi.	Hydromodification
Camp Br.	198	4.00	Mi.	Habitat Degradation
Camp Cr.	196	6.30	Mi.	Habitat Degradation
Camp Cr.	197	6.00	Mi.	Habitat Degradation
Campbell Cr.	491	2.80	Mi.	Habitat Degradation
Cane Creek Ditch	2820	7.50	Mi.	Habitat Degradation
Carroll Cr.	389	9.40	Mi.	Habitat Degradation
Carver Br.	3241	3.00	Mi.	Habitat Degradation
Casmer Br.	209	1.50	Mi.	Habitat Degradation
Castile Cr., Trib.	323	1.20	Mi.	Habitat Degradation
Chapman Br.	476	1.90	Mi.	Habitat Degradation
Charrette Cr.	1615	4.80	Mi.	Hydromodification
City Lake #2 (Perry)	7048	7.00	Ac.	Atrazine
Clear Cr.	117	4.70	Mi.	Habitat Degradation
Clear Cr.	292	13.00	Mi.	Habitat Degradation
Clear Cr.	433	6.00	Mi.	Habitat Degradation
Clear Cr.	2082	4.40	Mi.	Unknown (Biological Data)
Clear Cr.	388	5.00	Mi.	Unknown (Biological Data)
Clear Cr.	390	13.50	Mi.	Unknown (Biological Data)
Clear Cr., Trib.	393	2.20	Mi.	Habitat Degradation
Cole Cr.	225	5.70	Mi.	Habitat Degradation
Contrary Cr.	269	10.00	Mi.	Habitat Degradation
Coon Cr.	187	13.20	Mi.	Habitat Degradation
Coon Cr.	208	9.20	Mi.	Habitat Degradation
Coon Cr.	132	11.80	Mi.	Habitat Degradation
Cottonwood Cr.	410	3.90	Mi.	Habitat Degradation
Cottonwood Cr.	527	4.30	Mi.	Habitat Degradation
Courtois Cr.	1947	1.70	Mi.	Unknown (Biological Data)
Cow Br.	247	4.40	Mi.	Habitat Degradation

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
Crabapple Cr.	536	3.80	Mi.	Habitat Degradation
Crabapple Cr., Trib.	365	1.30	Mi.	Habitat Degradation
Craven Ditch	2816	11.00	Mi.	Habitat Degradation, Low Dissolved Oxygen
Crawford Cr.	1254	5.00	Mi.	Habitat Degradation
Crooked Cr.	201	1.50	Mi.	Habitat Degradation
Crooked Cr.	188	4.00	Mi.	Habitat Degradation
Crooked Cr.	330	2.80	Mi.	Habitat Degradation
Crooked Cr.	333	4.00	Mi.	Habitat Degradation
Crooked R.	376	7.50	Mi.	Habitat Degradation
Crooked R.	371	58.10	Mi.	Habitat Degradation, E. coli
Current R.	2662	18.80	Mi.	Mercury (Fish Tissue)
Cypress Cr.	443	15.80	Mi.	Habitat Degradation
Cypress Ditch #1	2616	9.70	Mi.	Habitat Degradation
Davis Cr.	255	3.50	Mi.	Habitat Degradation
Davis Cr.	144	8.80	Mi.	Habitat Degradation, Low Dissolved Oxygen
Davis Cr. Ditch	253	6.70	Mi.	Habitat Degradation
Davis Cr., Trib.	254	3.00	Mi.	Habitat Degradation
Dead Oak Br.	539	1.00	Mi.	Habitat Degradation
Dicks Cr.	320	7.30	Mi.	Habitat Degradation
Dillon Cr.	268	4.80	Mi.	Sediment
Ditch #11	3812	3.00	Mi.	Habitat Degradation
Ditch #16	3813	11.20	Mi.	Habitat Degradation
Ditch #2	2618	6.00	Mi.	Habitat Degradation
**				Habitat Degradation, Low Dissolved Oxygen,
Ditch #2	2617	3.20	Mi.	Bacteria
Ditch #22	2772	7.00	Mi.	Habitat Degradation
Ditch #23	2773	5.80	Mi.	Habitat Degradation
Ditch To Black R.	2770	9.50	Mi.	Habitat Degradation
Ditch To Black R.	2776	10.70	Mi.	Habitat Degradation
Ditch To Ditch #2	2619	1.50	Mi.	Habitat Degradation
Dog Cr.	510	5.70	Mi.	Sediment
Dry Br.	182	5.10	Mi.	Habitat Degradation
Dry Cr.	3418	9.30	Mi.	Habitat Degradation
Drywood Cr.	1314	30.00	Mi.	Unknown (Biological Data)
East Branch Elkhorn Cr.	288	4.70	Mi.	Habitat Degradation
East Branch Squaw Cr.	257	4.20	Mi.	Habitat Degradation
East Fork Big Muddy Cr.	463	2.00	Mi.	Habitat Degradation
East Fork Crooked R.	373	6.40	Mi.	Habitat Degradation
East Fork Crooked R., Trib.	374	4.80	Mi.	Habitat Degradation
East Fork Drywood Cr.	1320	10.00	Mi.	Low Dissolved Oxygen
East Fork Fishing R.	386	12.90	Mi.	Unknown (Biological Data)
East Fork Grand R.	467	6.50	Mi.	Habitat Degradation
East Fork Huzzah Cr.	1926	2.00	Mi.	Unknown (Biological Data)
East Fork Little Blue R.	428	3.70	Mi.	Habitat Degradation
East Fork Little Blue R., Trib.	429	1.90	Mi.	Habitat Degradation
East Fork Little Tarkio Cr.	249	17.80	Mi.	Habitat Degradation
East Fork Lost Cr.	497	10.00	Mi.	Habitat Degradation
East Fork Postoak Cr.	932	12.20	Mi.	Habitat Degradation

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
East Fork Shoal Cr.	398	2.90	Mi.	Habitat Degradation
East Fork Sni-A-Bar Cr.	402	9.60	Mi.	Habitat Degradation, Low Dissolved Oxygen
Ebo Cr.	2085	1.60	Mi.	Habitat Degradation
Edmondson Cr.	414	1.90	Mi.	Habitat Degradation
Edmondson Cr., Trib.	415	3.10	Mi.	Habitat Degradation
Elk Fork Salt R.	130	7.70	Mi.	Habitat Degradation
Elkhorn Cr.	287	11.80	Mi.	Habitat Degradation
Elm Br.	149	3.00	Mi.	Habitat Degradation
Elm Grove Br.	331	4.20	Mi.	Habitat Degradation
Fabius R.	55	3.50	Mi.	Habitat Degradation
Fassnight Cr.	3370	2.80	Mi.	Unknown (Biological Data)
Fee Fee Cr. (old)	1705	1.00	Mi.	Habitat Degradation
Femme Osage Cr.	1605	8.20	Mi.	Mercury (Fish Tissue)
Fire Br.	375	5.40	Mi.	Habitat Degradation
First Cr.	318	4.70	Mi.	Habitat Degradation
Fish Br.	143	1.90	Mi.	Habitat Degradation
Flat Cr.	129	13.50	Mi.	Habitat Degradation
Fletchall Cr.	471	4.00	Mi.	Habitat Degradation
Florida Cr.	289	8.40	Mi.	Habitat Degradation
Floyd Cr.	114	5.10	Mi.	Habitat Degradation
Galbreath Cr.	135	5.80	Mi.	Habitat Degradation
Galloway Cr.	3373	3.20	Mi.	Habitat Degradation
Garrison Fk.	407	6.80	Mi.	Habitat Degradation
Gasconade R.	1496	11.20	Mi.	Unknown (Biological Data)
Goose Cr.	456	2.40	Mi.	Habitat Degradation
Goose Cr.	532	4.40	Mi.	Habitat Degradation
Grand R., Old Channel	512	15.20	Mi.	Habitat Degradation
Grand R., Old Channel	513	3.10	Mi.	Habitat Degradation
Grand R., Old Channel	517	2.50	Mi.	Habitat Degradation
Grassy Cr.	72	19.80	Mi.	Habitat Degradation
Greys Lake	233	5.20	Mi.	Habitat Degradation
Grindstone Cr., Trib.	504	1.00	Mi.	Habitat Degradation
Grove Cr.	321	3.30	Mi.	Habitat Degradation
Grove Cr.	3204	2.90	Mi.	Lead, Zinc (Sediment)
Guinns Cr.	23	0.50	Mi.	Habitat Degradation
Harviell Ditch (#3)	2615	16.20	Mi.	Habitat Degradation
Hayzlett Br.	285	2.40	Mi.	Habitat Degradation
Hickory Cr.	186	6.00	Mi.	Habitat Degradation
Hickory Cr.	266	1.00	Mi.	Habitat Degradation
Hickory Cr.	308	1.00	Mi.	Habitat Degradation
Hickory Cr.	335	2.00	Mi.	Habitat Degradation
Hickory Cr.	442	2.80	Mi.	Habitat Degradation
Hickory Cr.	490	3.00	Mi.	Habitat Degradation
High Cr.	229	6.30	Mi.	Habitat Degradation
High Cr., Trib.	232	2.00	Mi.	Habitat Degradation
High Creek Ditch	228	3.70	Mi.	Habitat Degradation
Highly Cr.	307	3.90	Mi.	Habitat Degradation

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
Holland Br.	350	3.00	Mi.	Habitat Degradation
Holtzclaw Cr.	351	2.00	Mi.	Habitat Degradation
Honey Cr.	338	6.70	Mi.	Habitat Degradation
Honey Cr.	509	8.30	Mi.	Habitat Degradation
Honey Cr.	919	7.00	Mi.	Habitat Degradation
Hoover Cr.	127	7.20	Mi.	Habitat Degradation
Horseshoe Cr.	3413	5.80	Mi.	Low Dissolved Oxygen
Huff Cr.	306	2.00	Mi.	Habitat Degradation
Hurricane Br.	435	1.80	Mi.	Habitat Degradation
Indian Br.	432	3.80	Mi.	Habitat Degradation
Indian Camp Cr.	211	3.30	Mi.	Habitat Degradation
Indian Cr.	62	3.50	Mi.	Habitat Degradation
Indian Cr.	171	20.00	Mi.	Habitat Degradation
Indian Cr.	477	3.20	Mi.	Habitat Degradation
Indian Cr.	1999	21.40	Mi.	Habitat Degradation
Iowa Ditch	234	2.80	Mi.	Habitat Degradation
Irvins Br.	494	3.30	Mi.	Habitat Degradation
Island Cr.	485	8.90	Mi.	Habitat Degradation
Jenkins Cr.	286	7.20	Mi.	Habitat Degradation
Joachim Cr.	1719	30.20	Mi.	Lead (Sediment)
Johns Br.	184	1.30	Mi.	Habitat Degradation
Jones Br.	3968	1.50	Mi.	VOCs (Sediment)
Jordan Br.	275	7.20	Mi.	Habitat Degradation
Jordan Cr.	329	1.40	Mi.	Habitat Degradation
Keeney Cr.	384	4.90	Mi.	Habitat Degradation
Kettle Cr.	516	0.80	Mi.	Habitat Degradation
Kimsey Cr.	262	0.80	Mi.	Habitat Degradation
Kimsey Cr.	263	2.50	Mi.	Habitat Degradation
Kimsey Cr.	264	6.70	Mi.	Habitat Degradation
Lake Cr.	359	5.70	Mi.	Habitat Degradation
Lake Cr.	431	3.30	Mi.	Habitat Degradation
Lake Tom Sawyer	7035	4.00	Ac.	Mercury (Fish Tissue)
Larry Cr.	507	1.20	Mi.	Habitat Degradation
Lead Cr.	179	7.50	Mi.	Habitat Degradation
Lead Cr.	178	1.00	Mi.	Habitat Degradation
Lick Fk.	514	5.70	Mi.	Habitat Degradation
Lick Fk.	515	9.80	Mi.	Habitat Degradation
Lincoln Cr.	280	7.40	Mi.	Habitat Degradation
Little Bear Cr.	194	4.00	Mi.	Habitat Degradation
Little Blue R.	424	4.30	Mi.	Habitat Degradation
Little Bourbeuse R.	2063	3.00	Mi.	Unknown (Biological Data)
Little Crooked Cr.	118	4.70	Mi.	Habitat Degradation
Little Dardenne Cr.	223	7.40	Mi.	Unknown (Biological Data)
Little Fabius R.	79	36.40	Mi.	Habitat Degradation
Little Fox R.	39	19.80	Mi.	Habitat Degradation
Little Lead Cr.	181	4.00	Mi.	Habitat Degradation
Little Lost Cr.	1619	1.50	Mi.	Unknown (Biological Data)

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
Little Moniteau Cr.	814	5.10	Mi.	Habitat Degradation
Little Muddy Cr.	440	4.10	Mi.	Habitat Degradation
Little Otter Cr.	120	6.20	Mi.	Habitat Degradation
Little Otter Cr.	526	3.00	Mi.	Habitat Degradation
Little Sandy Cr.	165	6.00	Mi.	Habitat Degradation
Little Sandy Cr., Trib.	166	2.10	Mi.	Habitat Degradation
Little Sni-A-Bar Cr.	403	6.70	Mi.	Habitat Degradation
Little Sni-A-Bar Cr.	404	7.50	Mi.	Habitat Degradation
Little Tabo Cr.	409	9.20	Mi.	Habitat Degradation
Little Tarkio Cr.	250	15.40	Mi.	Habitat Degradation
Little Tarkio Cr., Old Channel	260	5.30	Mi.	Habitat Degradation
Little Tarkio Cr., Old Channel	261	8.30	Mi.	Habitat Degradation
Little Tarkio Ditch	251	6.60	Mi.	Habitat Degradation
Little Third Fork Platte R.	328	26.00	Mi.	Habitat Degradation
Little Wyaconda R.	52	7.40	Mi.	Habitat Degradation
Little Wyaconda R.	53	7.50	Mi.	Habitat Degradation
Littleby Cr.	147	16.00	Mi.	Habitat Degradation
Log Cr.	533	8.80	Mi.	Habitat Degradation
Long Br.	139	29.00	Mi.	Habitat Degradation
Long Br.	243	3.00	Mi.	Habitat Degradation
Long Br.	340	15.00	Mi.	Habitat Degradation
Long Br.	488	5.70	Mi.	Habitat Degradation
Long Cr.	535	3.30	Mi.	Habitat Degradation
Lost Cr.	1617	6.40	Mi.	Unknown (Biological Data)
Lost Cr.	1618	3.80	Mi.	Unknown (Biological Data)
Lotts Cr.	466	9.70	Mi.	Habitat Degradation
Lumpkin Cr.	425	0.50	Mi.	Habitat Degradation
Mace Cr.	267	5.80	Mi.	Habitat Degradation
Maple Leaf Lake	7398	127.00	Ac.	Mercury (Fish Tissue)
Marais des Cygnes R.	1297	32.00	Mi.	Bacteria
Marlowe Cr.	474	6.70	Mi.	Habitat Degradation
Marlowe Cr.	475	1.00	Mi.	Habitat Degradation
Marrowbone Cr.	511	13.90	Mi.	Habitat Degradation
McCarty Cr.	1338	13.20	Mi.	рН
McCoy Cr.	213	1.90	Mi.	Habitat Degradation
McCoy Cr.	214	4.50	Mi.	Habitat Degradation
McElroy Cr.	231	3.00	Mi.	Habitat Degradation
McGuire Br.	324	5.40	Mi.	Habitat Degradation
Memphis Reservoir	7013	39.00	Mi.	Temperature
Middle Branch Squaw Cr.	258	3.00	Mi.	Habitat Degradation
Middle Fork Grand R.	472	2.50	Mi.	Habitat Degradation
Middle Fork Grand R., Trib.	473	1.40	Mi.	Habitat Degradation
Middle Fork Lost Cr.	496	8.00	Mi.	Habitat Degradation
Middle Fork Salt R., Trib.	125	1.00	Mi.	Habitat Degradation
Middle Tarkio Cr.	245	10.00	Mi.	Habitat Degradation
Mikes Cr.	3254	4.00	Mi.	Habitat Degradation
Mill Cr.	265	10.00	Mi.	Habitat Degradation

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
Mill Cr.	301	10.80	Mi.	Habitat Degradation
Mill Cr.	529	1.30	Mi.	Habitat Degradation
Mill Cr., Trib.	303	1.80	Mi.	Habitat Degradation
Millers Cr.	740	1.90	Mi.	Sedimentation
Milligan Cr.	134	9.00	Mi.	Habitat Degradation
Mineral Fk., Trib.	2115	2.00	Mi.	Lead, Zinc (Sediment)
Missouri R., Trib.	411	5.30	Mi.	Habitat Degradation
Mistaken Cr.	1544	1.50	Mi.	Unknown (Biological Data)
Moccasin Cr.	483	2.60	Mi.	Habitat Degradation
Moss Br.	302	2.40	Mi.	Habitat Degradation
Moss Cr.	369	13.70	Mi.	Habitat Degradation
Moss Cr., Trib.	370	0.50	Mi.	Habitat Degradation
Mouse Cr.	426	1.50	Mi.	Habitat Degradation, Low Dissolved Oxygen
Mozingo Cr.	343	5.10	Mi.	Habitat Degradation
Mud Cr.	128	17.50	Mi.	Habitat Degradation
Mud Cr.	538	4.50	Mi.	Habitat Degradation
Mud Cr.	541	6.70	Mi.	Habitat Degradation
Mud Cr., Trib.	544	2.00	Mi.	Habitat Degradation
Mud Cr., Trib.	545	1.00	Mi.	Habitat Degradation
Mud Cr., Trib.	546	0.80	Mi.	Habitat Degradation
Mud Creek Ditch	537	3.50	Mi.	Habitat Degradation
Muddy Cr.	291	3.50	Mi.	Habitat Degradation
Muddy Cr.	434	3.50	Mi.	Habitat Degradation
Muddy Cr.	492	6.00	Mi.	Habitat Degradation
Muddy Fk.	391	8.40	Mi.	Inconclusive Invert Data
Narrows Cr.	126	2.60	Mi.	Habitat Degradation
Naylor Cr.	277	1.00	Mi.	Habitat Degradation
Neals Cr.	2752	3.20	Mi.	Nickel, Lead (Sediment)
New #7 Chute	3157	2.00	Mi.	Habitat Degradation
New Hope Cr.	392	5.50	Mi.	Habitat Degradation
Nichols Cr.	309	4.60	Mi.	Habitat Degradation
Nichols Cr., Trib.	310	1.30	Mi.	Habitat Degradation
Nishnabotna R., Old Channel	238	13.70	Mi.	Habitat Degradation
Nishnabotna R., Old Channel	240	3.00	Mi.	Habitat Degradation
Nishnabotna R., Trib. To Old				
Channel	239	0.90	Mi.	Habitat Degradation
Nishnabotna R., Trib. To Old		• • •		
Channel	241	2.00	Mi.	Habitat Degradation
Nodaway R., Old Channel	284	10.00	Mi.	Habitat Degradation
Nodaway R., Old Channel	294	1.20	Mi.	Habitat Degradation
Nodaway R., Old Channel	295	2.00	Mi.	Habitat Degradation
Nodaway R., Old Channel	297	1.50	Mi.	Habitat Degradation
Nodaway R., Old Channel	298	1.00	Mi.	Habitat Degradation
Nodaway R., Old Channel	299	2.50	Mi.	Habitat Degradation
Nodaway R., Old Channel	300	3.70	Mi.	Habitat Degradation
Nodaway R., Old Channel	304	2.50	Mi.	Habitat Degradation
Nodaway R., Old Channel	305	2.80	Mi.	Habitat Degradation
Nodaway R., Old Channel	311	1.00	Mi.	Habitat Degradation

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
Nodaway R., Trib.	281	1.00	Mi.	Habitat Degradation
North Branch Wilsons Cr.	3811	3.80	Mi.	Habitat Degradation
North Fabius R.	59	1.00	Mi.	Habitat Degradation
North Fork Middle Fabius R.	65	28.20	Mi.	Habitat Degradation
North Fork North Fabius R.	58	9.00	Mi.	Habitat Degradation
North Fork Salt R.	113	17.20	Mi.	Habitat Degradation
North Indian Cr., Trib.	3261	1.30	Mi.	Unknown (Biological Data)
North Mud Cr.	540	6.20	Mi.	Habitat Degradation
North Wyaconda R.	49	9.20	Mi.	Habitat Degradation
Norvey Cr.	344	9.30	Mi.	Habitat Degradation
Nulls Cr.	175	5.80	Mi.	Habitat Degradation
Old Mines Cr., Trib.	2113	1.00	Mi.	Habitat Degradation
Old Town Br.	1331	7.00	Mi.	Habitat Degradation
Old Town Br., Trib.	3647	1.30	Mi.	Habitat Degradation
Olive Br.	3504	0.80	Mi.	Habitat Degradation
One Hundred And Two R.	342	74.50	Mi.	Habitat Degradation, Atrazine
Opossum Cr.	3190	6.00	Mi.	Habitat Degradation, Low Dissolved Oxygen
Osage Fk.	1472	69.00	Mi.	Bacteria
Otter Cr.	525	2.00	Mi.	Habitat Degradation
Palmer Cr.	357	12.20	Mi.	Habitat Degradation
Palmer Cr.	358	2.80	Mi.	Habitat Degradation
Palmer Lake	7441	102.00	Ac.	Mercury (Fish Tissue)
Panther Cr.	460	4.80	Mi.	Habitat Degradation
Panther Cr.	521	5.00	Mi.	Habitat Degradation
Panther Cr., Trib.	522	2.40	Mi.	Habitat Degradation
Paris Br.	176	3.00	Mi.	Habitat Degradation
Peddler Cr.	469	1.50	Mi.	Habitat Degradation
Peddler Cr.	470	3.00	Mi.	Habitat Degradation
Pedlar Cr.	283	5.40	Mi.	Habitat Degradation
Peno Cr.	99	14.40	Mi.	Low Dissolved Oxygen
Peruque Cr.	218	10.90	Mi.	Habitat Degradation
Pigeon Cr.	349	7.20	Mi.	Habitat Degradation
Pike Creek Ditch	2813	4.00	Mi.	Habitat Degradation
Pilot Grove Cr.	439	5.40	Mi.	Habitat Degradation
Pine Cr.	2692	1.00	Mi.	Unknown (Biological Data)
Platte R., Old Channel	325	3.40	Mi.	Habitat Degradation
Platte R., Old Channel	326	2.20	Mi.	Habitat Degradation
Platte R., Old Channel	332	4.00	Mi.	Habitat Degradation
Platte R., Old Channel	341	5.00	Mi.	Habitat Degradation
Platte R., Old Channel	348	1.00	Mi.	Habitat Degradation
Plattin Cr.	1728	19.90	Mi.	Low Dissolved Oxygen
Polecat Cr.	445	11.10	Mi.	Habitat Degradation
Pomme Cr.	2192	1.80	Mi.	Habitat Degradation
Pond Cr.	2127	1.30	Mi.	Sedimentation
Poor Br.	195	3.00	Mi.	Habitat Degradation
Prairie Cr.	313	3.70	Mi.	Habitat Degradation
Prairie Cr., Trib.	314	1.00	Mi.	Habitat Degradation

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
Rattlesnake Cr.	520	3.00	Mi.	Habitat Degradation
Red Oak Cr.	2037	5.20	Mi.	Low Dissolved Oxygen
Reese Fk.	136	7.00	Mi.	Habitat Degradation
Reid Cr.	168	2.00	Mi.	Habitat Degradation
Ricky Cr.	1237	6.00	Mi.	Habitat Degradation
Riggin Br.	347	1.90	Mi.	Habitat Degradation
Rock Cr.	78	4.00	Mi.	Habitat Degradation
Rock Cr.	236	2.20	Mi.	Habitat Degradation
Rock Cr.	237	19.00	Mi.	Habitat Degradation
Rocky Fk.	378	4.00	Mi.	Habitat Degradation
Rollins Cr.	382	7.00	Mi.	Habitat Degradation
Rush Cr.	278	4.50	Mi.	Habitat Degradation
Saline Cr.	2189	1.80	Mi.	Low Dissolved Oxygen
Saline Cr.	2190	2.30	Mi.	Low Dissolved Oxygen
Salt Br.	413	5.70	Mi.	Habitat Degradation
Sampson Cr.	453	13.50	Mi.	Habitat Degradation
Sampson Cr.	455	5.60	Mi.	Habitat Degradation
Sand Cr.	290	4.90	Mi.	Habitat Degradation
Sand Run	206	2.00	Mi.	Habitat Degradation
Sandy Cr.	183	6.00	Mi.	Habitat Degradation
Second Cr.	317	11.50	Mi.	Habitat Degradation
Shackelford Br.	385	5.90	Mi.	Habitat Degradation
Shady Cr.	172	9.40	Mi.	Habitat Degradation
Shain Cr.	450	13.00	Mi.	Habitat Degradation
Shays Cr.	2865	1.70	Mi.	Lead, Arsenic (Sediment)
Sheep Cr.	530	1.00	Mi.	Habitat Degradation
Shell Br.	105	2.50	Mi.	Habitat Degradation
Shipley Slough	2971	2.50	Mi.	Habitat Degradation
Shoal Cr.	396	10.30	Mi.	Habitat Degradation
Shoal Cr.	397	10.60	Mi.	Habitat Degradation
Shoal Cr.	518	54.60	Mi.	Habitat Degradation
Shoal Cr.	1934	7.70	Mi.	Habitat Degradation
Shoal Cr.	3229	0.50	Mi.	Bacteria
Shoal Creek Ditch	519	9.80	Mi.	Habitat Degradation
Silver Cr.	3244	1.90	Mi.	Zinc (Sediment)
Sitton Br.	173	0.80	Mi.	Habitat Degradation
Sitton Br.	174	2.80	Mi.	Habitat Degradation
Smith Fork	353	3.00	Mi.	Habitat Degradation
Sni-A-Bar Cr.	401	4.30	Mi.	Habitat Degradation, Low Dissolved Oxygen
Snyder Ditch	2775	6.50	Mi.	Habitat Degradation
South Big Cr.	506	5.60	Mi.	Habitat Degradation
South Brush Cr.	108	2.00	Mi.	Habitat Degradation
South Cr.	3369	3.80	Mi.	Bacteria
South Fork Blackwater R.	921	5.70	Mi.	Habitat Degradation
South Fork Clear Cr.	293	6.00	Mi.	Habitat Degradation
South Fork Middle Fabius R.	67	14.80	Mi.	Habitat Degradation
South Fork Middle Fabius R.	68	13.00	Mi.	Habitat Degradation

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
South Fork North Fabius R.	60	11.50	Mi.	Habitat Degradation
South Fork North Fabius R., Trib.	61	4.10	Mi.	Habitat Degradation
South Fork Salt R., Trib.	146	0.50	Mi.	Habitat Degradation
South Fork South Fabius R.	76	7.90	Mi.	Habitat Degradation
South Fork South Fabius R.	77	18.30	Mi.	Habitat Degradation
South Mud Cr.	542	3.80	Mi.	Habitat Degradation
South R.	3	16.30	Mi.	Unknown (Biological Data)
South Wyaconda R.	51	17.50	Mi.	Habitat Degradation
Spring R.	3159	0.50	Mi.	Bacteria, Metals (Sediments)
Spring R.	3167	1.00	Mi.	Bacteria
Squaw Cr.	252	21.00	Mi.	Habitat Degradation
Stahl Cr.	3176	7.30	Mi.	E. coli
Steins Cr.	1486	16.60	Mi.	Habitat Degradation
Stillcamp Ditch	2810	12.30	Mi.	Habitat Degradation
Stillhouse Br.	489	2.00	Mi.	Habitat Degradation
Sugar Cr.	156	11.00	Mi.	Habitat Degradation
Sugar Cr.	270	3.00	Mi.	Habitat Degradation
Sugar Cr.	271	6.50	Mi.	Habitat Degradation
Sulphur Cr.	169	9.30	Mi.	Habitat Degradation
Sweetwater Br.	2866	1.00	Mi.	Lead, Cadmium (Sediment)
Sweetwater Br.	2867	1.70	Mi.	Lead, Cadmium (Sediment)
Sweetwater Br., Trib.	2868	1.00	Mi.	Lead (Sediment)
Tabo Cr.	405	11.40	Mi.	Habitat Degradation
Tabo Cr.	406	8.40	Mi.	Habitat Degradation
Tarkio R.	242	33.50	Mi.	Habitat Degradation
Thompson Br.	458	1.00	Mi.	Habitat Degradation
Thompson Cr.	437	1.60	Mi.	Habitat Degradation
Tobin Cr.	64	8.00	Mi.	Habitat Degradation
Troublesome Cr.	73	4.80	Mi.	Unknown (Biological Data)
Tub Cr.	534	1.00	Mi.	Habitat Degradation
Turkey Cr.	138	2.00	Mi.	Habitat Degradation
Turkey Cr.	361	5.00	Mi.	Habitat Degradation
Turkey Cr.	362	3.50	Mi.	Habitat Degradation
Turkey Cr.	486	1.50	Mi.	Habitat Degradation
Turkey Cr.	523	2.50	Mi.	Habitat Degradation
Turkey Cr.	199	12.00	Mi.	Habitat Degradation
Turkey Cr., Trib.	524	1.00	Mi.	Habitat Degradation
Unity Village Lake #2	7099	26.00	Ac.	Mercury (Fish Tissue)
Van Meter Ditch	412	4.50	Mi.	Habitat Degradation
Wakenda Cr.	360	29.20	Mi.	Habitat Degradation
Wakenda Cr.	364	10.60	Mi.	Habitat Degradation
Wakenda Cr., Old Channel	368	3.00	Mi.	Habitat Degradation
Walnut Cr.	1339	2.30	Mi.	Low Dissolved Oxygen
Walnut Fork	487	4.30	Mi.	Habitat Degradation
Wamsley Cr.	505	1.70	Mi.	Habitat Degradation
Weldon Br.	459	4.40	Mi.	Habitat Degradation
West Fork Big Cr.	449	18.00	Mi.	Habitat Degradation

Waterbody	WBID	Size	Units	Potential Pollutant or Condition
West Fork Crooked R.	379	6.60	Mi.	Habitat Degradation
West Fork Crooked R.	380	9.80	Mi.	Habitat Degradation
West Fork Cuivre R.	177	42.40	Mi.	Habitat Degradation
West Fork Cuivre R.	185	23.90	Mi.	Habitat Degradation
West Fork Lost Cr.	499	11.70	Mi.	Habitat Degradation
West Fork Lost Cr., Trib.	500	2.80	Mi.	Habitat Degradation
West Fork Lost Cr., Trib.	501	2.60	Mi.	Habitat Degradation
West Fork Postoak Cr.	929	12.80	Mi.	Habitat Degradation
West Fork Wakenda Cr.	366	3.30	Mi.	Habitat Degradation
West Fork Wakenda Cr.	367	7.80	Mi.	Habitat Degradation
West High Cr.	230	2.80	Mi.	Habitat Degradation
West Tarkio Cr.	244	1.20	Mi.	Habitat Degradation
West Tarkio Cr.	246	9.60	Mi.	Habitat Degradation
Wheeler Cr.	503	2.40	Mi.	Habitat Degradation
Whitcomb Br.	200	2.50	Mi.	Habitat Degradation
White Cloud Cr.	346	12.80	Mi.	Habitat Degradation
White Oak Cr.	454	9.00	Mi.	Habitat Degradation
White Oak Cr.	190	2.60	Mi.	Habitat Degradation
Wildcat Cr.	259	4.00	Mi.	Habitat Degradation
Wildcat Cr.	480	6.20	Mi.	Habitat Degradation
Wildcat Cr.	482	7.40	Mi.	Habitat Degradation
Wildcat Cr., Trib.	481	2.00	Mi.	Habitat Degradation
Wildcat Cr., Trib.	484	2.00	Mi.	Habitat Degradation
Williams Cr.	387	9.10	Mi.	Unknown (Biological Data)
Willow Cr.	381	6.50	Mi.	Habitat Degradation
Willow Cr.	498	1.00	Mi.	Habitat Degradation
Willow Cr.	543	1.50	Mi.	Habitat Degradation
Winn Br.	122	5.00	Mi.	Habitat Degradation
Wolf Cr.	191	4.50	Mi.	Habitat Degradation
Wolf Cr., Trib.	3589	1.50	Mi.	Low Dissolved Oxygen
Wyaconda R.	47	42.20	Mi.	Habitat Degradation
Yeater Br.	210	2.60	Mi.	Habitat Degradation
Zadie Cr.	448	5.30	Mi.	Habitat Degradation
Zounds Br.	479	3.00	Mi.	Habitat Degradation

Appendix II Total Maximum Daily Load Completion Schedule

Table 17. Tentative Schedule for the Completion of Total Maximum Daily Load Studies.

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2012	Big River	2080	P	18.6	68	St. Francois	Zinc (S)	1G
2012	Big River	2080	P	18.6	68	St. Francois	Cadmium (S)	1G
2012	Blue River	417	P	4.4	4.4	Jackson	Bacteria	2
2012	Blue River	418	P	9.4	9.4	Jackson	Bacteria	2
2012	Blue River	419	P	7.7	7.7	Jackson	Bacteria	2,5
2012	Blue River	421	С	12	12	Jackson	Bacteria	2
2012	Bonne Femme Creek	750	P	7.8	7.8	Boone	Bacteria	2
2012	Capps Creek	3234	P	5	5	Barry	Bacteria	2
2012	Center Creek	3203	P	12.8	26.8	Jasper	Bacteria	2
2012	Center Creek	3214	P	4.9	4.9	Lawrence/Newton	Bacteria	2
2012	Center Creek	3210	P	21	21	Newton/Jasper	Bacteria	2
2012	Clear Creek	3238	P	11.1	11.1	Barry/Newton	Bacteria	2
2012	Coldwater Creek	1706	С	6.9	6.9	St. Louis	Bacteria	2
2012	Creve Coeur Creek	1703	С	3.8	3.8	St. Louis	Bacteria	2
2012	Dry Branch	3189	С	10.2	10.2	Jasper	Bacteria	2
2012	East Fork Locust Creek	608	P	16.7	16.7	Sullivan	Bacteria	2
2012	East Fork Locust Creek	610	С	0.4	15.7	Sullivan	Bacteria	2
2012	East Fork Locust Creek	610	С	15.3	15.7	Sullivan	Bacteria	2
2012	Eaton Branch	2166	С	0.9	1.2	St. Francois	Zinc (W)	1
2012	Eaton Branch	2166	С	0.9	1.2	St. Francois	Cadmium (W)	1
2012	Eaton Branch	2166	С	0.9	1.2	St. Francois	Zinc (S)	1G
2012	Eaton Branch	2166	С	0.9	1.2	St. Francois	Lead (S)	1G
2012	Eaton Branch	2166	С	0.9	1.2	St. Francois	Cadmium (S)	1G
2012	Fishpot Creek	2186	P	3.5	3.5	St. Louis	Bacteria	2

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2012	Flat River Creek	2168	С	5	10	St. Francois	Cadmium (W)	1
2012	Flat River Creek Tributary	2168U	U	n/a	n/a	St. Francois	Zinc(W)	1
2012	Grand Glaize Creek	2184	С	4	4	St. Louis	Bacteria	2
2012	Grand River	593	P	56	56	Livingston/Chariton	Bacteria	2
2012	Gravois Creek	1712	P	2.3	2.3	St. Louis	Bacteria	2
2012	Gravois Creek	1713	С	6	6	St. Louis	Bacteria	2
2012	Grindstone Creek	1009	С	1.5	2.5	Boone	Bacteria	2
2012	Hickory Creek	3226	P	4.9	4.9	Newton	Bacteria	2
2012	Hinkson Creek	1008	С	18.8	18.8	Boone	Bacteria	2
2012	Honey Creek	3169	P	16.5	16.5	Lawrence	Bacteria	2
2012	Honey Creek	3170	С	2.7	2.7	Lawrence	Bacteria	2
2012	Indian Creek	420	С	3.4	3.4	Jackson	Bacteria	2
2012	Little Medicine Creek	623	P	39.8	39.8	Mercer/Grundy	Bacteria	2
2012	Locust Creek	606	P	36.4	91.7	Putnam/Sullivan	Bacteria	2,5
2012	Medicine Creek	619	P	43.8	43.8	Putnam/Grundy	Bacteria	2
2012	Meramec River	2183	P	22.8	22.8	St. Louis	Lead (S)	1G
2012	Meramec River	2185	P	15.7	15.7	St. Louis	Lead (S)	1G
2012	Missouri River	226	P	184.5	184.5	Atchison/Jackson	Bacteria	2
2012	Missouri River	1604	P	104.5	104.5	St. Louis/ Gasconade	Bacteria	2
2012	North Fork Spring River	3186	P	17.4	17.4	Barton	Bacteria	2
2012	North Fork Spring River	3188	С	55.9	55.9	Dade/Jasper	Bacteria	2
2012	Old Mines Creek, Tributary	2114	С	0.9	1.5	Washington	Sediment	1
2012	Shaw Branch	2170	С	1.2	1.2	St. Francois	Cadmium (S)	1G
2012	Shoal Creek	3222	P	41.1	41.1	Newton	Bacteria	2
2012	Spring River	3164	P	8.8	8.8	Lawrence	Bacteria	2
2012	Spring River	3165	P	11.9	11.9	Lawrence	Bacteria	2
2012	Spring River	3160	P	61.7	61.7	Lawrence/Jasper	Bacteria	2
2012	Sugar Lake (Lewis and Clark State Park)	7067	L3	403	403	Buchanan	Bacteria	2

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2012	Truitt Creek	3175	С	6.4	6.4	Lawrence	Bacteria	2
2012	Turkey Creek	3282	P	1.2	2.4	St. Francois	Zinc (W)	1
2012	Turkey Creek	3282	P	2.4	2.4	St. Francois	Lead (W)	1
2012	Turkey Creek	3282	P	2.4	2.4	St. Francois	Cadmium (W)	1
2012	Turkey Creek	3216	P	7.7	7.7	Jasper	Bacteria	2
2012	Turkey Creek	3217	P	6.1	6.1	Jasper	Bacteria	2
2012	Watkins Creek	1708	С	1.4	1.4	St. Louis	Bacteria	2
2012	White Oak Creek	3182	С	18	18	Lawrence/Jasper	Bacteria	2
2012	Williams Creek	3171	P	1	1	Lawrence	Bacteria	2
2012	Williams Creek	3172	P	8.5	8.5	Lawrence	Bacteria	2
2013	Baldwin Park Tributary (to Chat Creek)	3168U	U	n/a	n/a	Lawrence	Zinc (W)	1G
2013	Bee Fork	2760	С	0.9	8.5	Reynolds	Lead (S)	1
2013	Bee Fork	2760	С	8.5	8.5	Reynolds	Lead	1
2013	Bee Fork	2760U-01	U	0.3	n/a	Reynolds	Lead (S)	1G
2013	Center Creek	3203	P	12.8	26.8	Jasper	Cadmium (W)	1
2013	Center Creek	3203	P	12.8	26.8	Jasper	Zinc (S)	1G
2013	Center Creek	3203	P	12.8	26.8	Jasper	Lead (S)	1G
2013	Center Creek	3203	P	12.8	26.8	Jasper	Cadmium (S)	1G
2013	Chat Creek (formerly Douger Br.)	3168	С	1	2.1	Lawrence	Cadmium (W)	1
2013	Chat Creek (formerly Douger Br.)	3168	С	1	2.1	Lawrence	Zinc (S)	1G
2013	Chat Creek (formerly Douger Br.)	3168	С	1	2.1	Lawrence	Lead (S)	1G
2013	Courtois Creek	1943	P	2.6	32	Washington	Metals*** (S)	1G
2013	Dousinbury Creek	1180	P	3.9	3.9	Dallas	Bacteria	2
2013	East Fork Grand River	457	P	28.7	28.7	Worth/Gentry	Bacteria	2
2013	Indian Creek	3256	P	5	30.8	Newton	Bacteria	2
2013	Kiefer Creek	3592	P	1.2	1.2	St. Louis	Bacteria	2
2013	Lake Ste. Louise	7055	L3	71	71	St. Charles	Bacteria	2

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2013	Lone Elm Hollow	3216U	U	1.4	n/a	Jasper	Metals	1G
2013	Lost Creek	3278	P	8.5	8.5	Newton	Bacteria	2
2013	Middle Fork Grand River	468	P	27.5	27.5	Worth/Gentry	Bacteria	2
2013	Middle Indian Creek	3263	P	2.2	2.2	Newton	Bacteria	2
2013	No Creek	550	P	28.7	28.7	Grundy/Livingston	Bacteria	2
2013	North Indian Creek	3260	P	5.2	5.2	Newton	Bacteria	2
2013	Pearson Creek	2373	P	2	8	Greene	Bacteria	2
2013	South Grand River	1249	P	66.8	66.8	Cass/Henry	Bacteria	2
2013	South Indian Creek	3259	P	8.7	8.7	McDonald/Newton	Bacteria	2
2013	Strother Creek	2751	P	2.1	6	Iron	Zinc (W)	1G
2013	Strother Creek	2751	P	2.1	6	Iron	Zinc (S)	1G
2013	Strother Creek	2751	P	2.1	6	Iron	Nickel (S)	1G
2013	Strother Creek	2751	P	2.1	6	Iron	Lead (W)	1G
2013	Strother Creek	2751	P	2.1	6	Iron	Lead (S)	1G
2013	Strother Creek	2751U-01	U	1	n/a	Reynolds/Iron	Zinc (S)	1G
2013	Strother Creek	2751U-01	U	1	n/a	Reynolds/Iron	Nickel (S)	1G
2013	Strother Creek	2751U-01	U	1	n/a	Reynolds/Iron	Lead (S)	1G
2013	Strother Creek	2751U-01	U	1	n/a	Reynolds/Iron	Arsenic (S)	1G
2013	Thompson River	549	P	5	70.6	Harrison	Bacteria	2
2013	Turkey Creek	3216	P	7.7	7.7	Jasper	Cadmium (W)	1
2013	Turkey Creek	3216	P	7.7	7.7	Jasper	Zinc (S)	1G
2013	Turkey Creek	3217	P	6.1	6.1	Jasper	Zinc (S)	1G
2013	Turkey Creek	3216	P	7.7	7.7	Jasper	Lead (S)	1G
2013	Turkey Creek	3217	P	6.1	6.1	Jasper	Lead (S)	1G
2013	Turkey Creek	3216	P	7.7	7.7	Jasper	Cadmium (S)	1G
2013	Turkey Creek	3217	P	6.1	6.1	Jasper	Cadmium (S)	1G
2013	Weldon River	560	P	43.4	43.4	Mercer/Grundy	Bacteria	2
2013	West Fork Black River	2755	P	1.3	32.3	Reynolds	Nickel (S)	1G
2013	West Fork Black River	2755	P	1.3	32.3	Reynolds	Lead (S)	1G

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2013	Wilson Creek	2375	P	1	14	Greene	Bacteria	2
2014	Castor River	2288	P	7.5	7.5	Bollinger	Bacteria	2
2014	Coldwater Creek	1706	С	6.9	6.9	St. Louis	Chloride	1
2014	Creve Coeur Creek	1703	С	3.8	3.8	St. Louis	Chloride	1
2014	Crooked Creek	1928	P	3.5	3.5	Dent/Crawford	Cadmium (W)	1
2014	Crooked Creek	1928	P	3.5	3.5	Dent/Crawford	Lead (S)	1G
2014	Crooked Creek	1928	P	3.5	3.5	Dent/Crawford	Cadmium (S)	1G
2014	Crooked Creek	1928U-01	U	5.2	n/a	Iron/Dent	Copper (W)	1G
2014	Crooked Creek	1928U-01	U	5.2	n/a	Iron/Dent	Cadmium (W)	1G
2014	Grand Glaize Creek	2184	С	4	4	St. Louis	Chloride	1
2014	Gravois Creek	1712	P	2.3	2.3	St. Louis	Chloride	1
2014	Gravois Creek	1713	С	6	6	St. Louis	Chloride	1
2014	Indian Creek	420	С	3.4	3.4	Jackson	Chloride	1
2014	Lamine River	847	P	64	64	Morgan/Cooper	Bacteria	2
2014	Lateral #2 Main Ditch	3105	P	11.5	11.5	Stoddard	Temperature	1
2014	Little Medicine Creek	623	P	20	39.8	Mercer/Grundy	Unknown	1G
2014	Little Muddy Creek, Tributary to	3490	С	1	1	Pettis	Chloride	1
2014	Little Muddy Creek, Tributary to	3490	С	1	1	Pettis	Color	G
2014	Little Osage River	3652	C	23.6	23.6	Vernon	Bacteria	2
2014	Meramec River	2183	P	22.8	22.8	St. Louis	Bacteria	2
2014	Muddy Creek	853	P	39	62.2	Pettis	Chloride	1
2014	Muddy Creek	853	P	62.2	62.2	Pettis	Unknown	1G
2014	Muddy Creek	853	P	1	62.2	Pettis	Color	G
2014	Mussel Fork Creek	674	C	29	29	Sullivan/Macon	Bacteria	2
2014	Niangua River	1170	P	56	56	Dallas	Bacteria	2
2014	North Fork Cuivre River	170	С	10	10	Pike	Bacteria	2
2014	Peruque Creek	217	P	n/a	4	St. Charles	Inorganic Sediment	1G

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2014	Peruque Creek	218	С	n/a	8	St. Charles	Inorganic Sediment	1G
2014	River des Peres	1710	С	2.6	2.6	St. Louis	Chloride	1
2014	River des Peres	1710U-01	U	2.5	n/a	St. Louis	Chloride	1G
2014	South Fabius River	71	P	80.6	80.6	Knox/Marion	Bacteria	2
2014	St. Johns Ditch	3138	P	15.3	15.3	Scott/New Madrid	Bacteria	2
2014	Table Rock Lake, James, Kings and Long Creek Arms	7313	L2	25860	25860	Stone	Nutrients	2
2014	Table Rock Lake, White River Arm	7313	L2	17240	17240	Stone	Nitrogen	1
2014	Table Rock Lake, White River Arm	7313	L2	17240	17240	Stone	Chlorophyll	1
2014	Warm Fork Spring River	2579	P	1.2	13.8	Oregon	Bacteria	2
2014	Watkins Creek	1708	C	1.4	1.4	St. Louis	Chloride	1
2015	Belcher Branch Lake	7365	L3	55	55	Buchanan	Mercury (T)	1G
2015	Bethany Lake	7109	L3	78	78	Harrison	Mercury (T)	1G
2015	Big Creek	2916	P	3	34.1	Wayne/Iron	Metals (S)	1
2015	Big Creek	2916	P	3	34.1	Wayne/Iron	Lead (S)	1
2015	Big Creek	2916	P	3	34.1	Wayne/Iron	Cadmium (S)	1
2015	Black River	2784	P	39	39	Wayne/Butler	Mercury (T)	1G
2015	Blackberry Creek	3184	C	3.5	6.5	Jasper	Sulfate Chloride	1
2015	Blackberry Creek	3184	С	3.5	6.5	Jasper	Chloride	1
2015	Bourbeuse River	2034	P	136.7	136.7	Phelps/Franklin	Mercury (T)	1G
2015	Busch Lake #35	7057	L3	51	51	St. Charles	Mercury (T)	1G
2015	Busch Lake #37	7056U	U	34	34	St. Charles	Mercury (T)	1G
2015	Cedar Creek	737	С	7	37.4	Callaway	Unknown	1G
2015	Clearwater Lake	7326	L2	1635	1635	Reynolds/Wayne	Mercury (T)	1G
2015	Current River	2636	P	124	124	Shannon/Ripley	Mercury (T)	1G
2015	Dardenne Creek	221	P	16.5	16.5	St. Charles	Unknown	1G
2015	Dardenne Creek	221	P	16.5	16.5	St. Charles	Inorganic Sediment	1G
2015	Deer Ridge Lake	7015	L3	39	39	Lewis	Mercury (T)	1G

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2015	Des Moines River	36	P	31.3	31.3	Clark	Bacteria	2
2015	Eleven Point River	2597	P	11.4	11.4	Oregon	Mercury (T)	1G
2015	Eleven Point River	2601	P	22.3	22.3	Oregon	Mercury (T)	1G
2015	Fox River	38	P	42	42	Clark	Bacteria	2
2015	Foxboro Lake	7382	L3	22	22	Franklin	Mercury (T)	1G
2015	Frisco Lake (formerly Schuman Park Lake)	7280	L3	5	5	Phelps	Mercury (T)	1G
2015	Gasconade River	1455	P	264	264	Gasconade/Wright	Mercury (T)	1G
2015	Goose Creek, Tributary	1420	C	3	3	Lawrence	Bacteria	2
2015	Grand Glaize Creek	2184	C	4	4	St. Louis	Mercury (T)	1G
2015	Hazel Creek Lake	7152	L1	453	453	Adair	Mercury (T)	1G
2015	Hough Park Lake	7388	L3	10	10	Cole	Mercury (T)	1G
2015	Indian Creek Lake	7389	L3	185	185	Livingston	Mercury (T)	1G
2015	Knob Noster State Park Lakes (Lake Buteo)	7196	L3	10	24	Johnson	Mercury (T)	1G
2015	Lac Capri	7297A	L3	112	112	St. Francois	Nitrogen	1
2015	Lac Capri	7297A	L3	112	112	St. Francois	Chlorophyll	1
2015	Lake of the Woods	7436	L3	3	3	Boone	Mercury (T)	1G
2015	Lake of the Woods	0419U-01	U	7	n/a	Jackson	Mercury (T)	1G
2015	Lake St. Louis	7054	L3	444	444	St. Charles	Mercury (T)	1
2015	Lake Winnebago	7212	L3	272	272	Cass	Mercury (T)	1G
2015	Little Beaver Creek	1529	С	3.3	3.5	Phelps	Inorganic Sediment	1G
2015	Little Lost Creek	3279	P	5.8	5.8	Newton	Bacteria	2
2015	Longview Lake	7097	L2	853	853	Jackson	Mercury (T)	1G
2015	Main Ditch	2814	С	10	13	Butler	Temperature	1
2015	Main Ditch	2814	С	1	13	Butler	pН	1
2015	Main Ditch	2814	С	1	13	Butler	Ammonia	1
2015	Marceline New Lake	7136	L1	200	200	Chariton	Phosphorus	1
2015	Marceline New Lake	7136	L1	200	200	Chariton	Nitrogen	1
2015	Marceline New Lake	7136	L1	200	200	Chariton	Chlorophyll	1

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2015	Mark Twain Lake	7033	L2	18132	18132	Ralls	Mercury (T)	1G
2015	Meramec River	1841	P	76	76	Franklin/Jefferson	Mercury (T)	1G
2015	Monzingo Lake	7402	L1	898	898	Nodaway	Mercury (T)	1G
2015	Noblett Lake	7316	L3	26	26	Douglas	Mercury (T)	1G
2015	North Fork Spring River	3188	С	1	55.9	Dade/Jasper	Ammonia	1
2015	Phillips Lake	1003U-01	U	32	n/a	Boone	Mercury (T)	1G
2015	Pickle Creek	1755	P	7.8	7.8	Ste. Genevieve	pН	1
2015	Pike Creek	2815	С	1.3	6	Butler	Temperature	1
2015	Salt River	91	P	29	29	Ralls/Pike	Mercury (T)	1G
2015	Scroggins Branch	2916U-01	U	0.5	n/a	Iron	Zinc (W)	1G
2015	Scroggins Branch	2916U-01	U	0.5	n/a	Iron	Cadmium (W)	1G
2015	St. Johns Ditch	3138	P	15.3	15.3	Scott/New Madrid	Mercury (T)	1G
2015	Sunset Lake (formerly McKay Park Lake)	7399	L3	6	6	Cole	Mercury (T)	1G
2015	Turnback Creek	1414	P	19.9	19.9	Lawrence/Dade	Bacteria	2
2015	Willow Branch	3280	P	2.2	2.2	Newton	Bacteria	2
2016	Big Creek	444	P	6	22	Harrison	Low D.O.	1
2016	Big Creek	444	P	1	22	Harrison	Ammonia	1
2016	Big Otter Creek, Tributary to	1225	С	1	1	Henry	Low D.O.	1
2016	Bobs Creek	35	С	3.5	14.2	Lincoln	Low D.O.	1
2016	Brush Creek	1371	P	4.7	4.7	Polk/St. Clair	Organic Sediment	1
2016	Brush Creek	1371	P	4.7	4.7	Polk/St. Clair	Low D.O.	1
2016	Burgher Branch	1865	С	1.5	1.5	Phelps	Low D.O.	1
2016	Clear Creek	3239	С	3.5	3.5	Barry/Newton	Nutrients	G
2016	Clear Creek	3239	С	3.5	3.5	Barry/Newton	Low D.O.	G
2016	Clear Fork	935	P	3	25.8	Johnson	Low D.O.	1
2016	Dark Creek	690	С	9.1	9.1	Randolph	Low D.O.	1
2016	Dutro Carter Creek	3569	P	0.6	1.5	Phelps	Low D.O.	1
2016	Dutro Carter Creek	3569	P	0.9	1.5	Phelps	Low D.O.	1

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2016	East Fork Locust Creek	610	С	15.3	15.7	Sullivan	Low D.O.	1
2016	East Fork Tebo Creek	1282	С	1	14.5	Henry	Low D.O.	1
2016	Elm Branch	1283	С	3	3	Henry	Low D.O.	1
2016	Foster Creek	0747U-01	U	0.5	n/a	Boone	Ammonia	1
2016	Fowler Creek	747	С	6	6	Boone	Low D.O.	1
2016	Heath's Creek	848	P	21	21	Pettis	Low D.O.	1
2016	Little Dry Fork	1863	P	1	5.2	Phelps	Low D.O.	1
2016	Little Dry Fork	1864	С	0.6	4.7	Phelps	Low D.O.	1
2016	Little Dry Fork	1864	С	3.9	4.7	Phelps	Low D.O.	1
2016	Little Niangua River	1189	P	20	43.8	Dallas/Camden	Low D.O.	1
2016	Long Branch Creek	696	С	2	14.8	Macon	Low D.O.	1
2016	Miami Creek	1299	P	19.6	19.6	Bates	Low D.O.	1
2016	No Creek	550	P	28.7	28.7	Grundy/Livingston	Low D.O.	1
2016	North Fork Cuivre River	170	С	10	10	Pike	Low D.O.	1
2016	North Fork Spring River	3188	С	55.9	55.9	Dade/Jasper	Low D.O.	1
2016	Panther Creek	1373	С	9.7	9.7	St.Clair/Polk	Low D.O.	1
2016	Red Oak Creek	2038	С	10	10	Gasconade	Low D.O.	1
2016	Red Oak Creek, Tributary to	3360	P	0.5	0.5	Gasconade	Low D.O.	1
2016	Red Oak Creek, Tributary to	3361	С	0.9	1.9	Gasconade	Low D.O.	1
2016	Renfro Creek (a.k.a. Cedar Creek, Trib.)	743	С	1.5	1.5	Callaway	Low D.O.	1
2016	Richland Creek	884	C	6.2	10	Morgan	Low D.O.	1
2016	Salt Creek	594	С	14.9	14.9	Livingston/Chariton	Low D.O.	1
2016	Salt River	91	P	29	29	Ralls/Pike	Low D.O.	1
2016	Shoal Creek	3231	С	5	5	Barry	Low D.O.	1
2016	Sni-a-Bar Creek	399	P	36.6	36.6	Jackson/Lafayette	Low D.O.	1
2016	Straight Fork	959	С	2.5	6	Morgan	Low D.O.	1
2016	Sugar Creek	686	P	6.8	6.8	Randolph	Low D.O.	1
2016	Troublesome Creek	74	С	41.3	41.3	Knox/Marion	Low D.O.	1

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2016	West Fork Sni-a-Bar	400	P	9	9	Jackson	Low D.O.	1
2016	Whetstone Creek	1504	P	12.2	12.2	Wright	Low D.O.	1
2016	Whetstone Creek	1505U	U	0.6	n/a	Wright	Ammonia	1G
2016	Willow Fork	955	С	6.8	6.8	Moniteau	Low D.O.	1
2016	Willow Fork, Tributary to	956	С	0.5	0.5	Moniteau	Low D.O.	1
2016	Wolf Creek	2879	С	8	8.0	St. Francois	Low D.O.	1
2016	Wolf Creek, Tributary to	3589	С	1.5	1.5	St. Francois	Low D.O.	1
2017	Atkinson Lake	7234	L3	434	434	St. Clair	Phosphorus	1
2017	Big Piney River	1578	P	4	7.8	Texas	Low D.O.	1
2017	Coldwater Creek	1706	С	4	6.9	St. Louis	Low D.O.	1
2017	Coon Creek	132	С	11.8	11.8	Randolph/Monroe	Low D.O.	1
2017	Coon Creek, Tributary to	133	С	2	2	Randolph	Low D.O.	1
2017	Creve Coeur Creek	1703	С	3.8	3.8	St. Louis	Low D.O.	1
2017	Dardenne Creek	219	P1	7	7	St. Charles	Low D.O.	1
2017	Dardenne Creek	222	С	6	6	St. Charles	Low D.O.	1
2017	Dardenne Creek	221	P	16.5	16.5	St. Charles	Low D.O.	1G
2017	Ditch #36	3109	P	7.8	7.8	Dunklin	Low D.O.	1
2017	East Fork Crooked River	372	P	19.9	19.9	Ray	Low D.O.	1
2017	Fishpot Creek	2186	P	3.5	3.5	St. Louis	Low D.O.	1
2017	Gravois Creek	1713	С	6	6	St. Louis	Low D.O.	1
2017	Lateral #2 Main Ditch	3105	P	11.5	11.5	Stoddard	Low D.O.	1
2017	Maline Creek	1709	С	0.6	0.6	St. Louis	Low D.O.	1
2017	Maple Slough Ditch	3140	С	18.2	18.2	Mississippi/New Madrid	Low D.O.	1
2017	McKenzie Creek	2786	P	2.5	6	Wayne	Low D.O.	1
2017	Middle Fork Salt River	121	P	24.8	85.1	Macon/Monroe	Low D.O.	1
2017	Pike Creek	2815	С	1.3	6	Butler	Low D.O.	1
2017	Pole Cat Slough (a.k.a. Ditch to Buffalo Ditch)	3120	P	12.6	12.6	Dunklin	Low D.O.	1
2017	Red Oak Creek, Tributary to	3361	С	1	1.9	Gasconade	Low D.O.	1

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2017	River des Peres	1710	С	2.6	2.6	St. Louis	Low D.O.	1
2017	South Blackbird Creek	655	С	5	13	Putnam	Ammonia	1
2017	South Davis Creek	913		4.6	4.6	Lafayette	Low D.O.	1
2017	South Fork Salt River	142	С	17.9	40.1	Callaway/Audrain	Low D.O.	1
2017	Stevenson Bayou	3135	С	6.4	6.4	Mississippi	Low D.O.	1
2017	Turkey Creek	3282	P	1.2	2.4	St. Francois	Low D.O.	1
2018	Atkinson Lake	7234	L3	434	434	St. Clair	Chlorophyll	1
2018	Bilby Ranch Lake	7368	L3	95	95	Nodaway	Chlorophyll	1
2018	Binder Lake	7185	L3	127	127	Cole	Phosphorus	1
2018	Binder Lake	7185	L3	127	127	Cole	Chlorophyll	1
2018	Brush Creek	1372	С	5.5	5.5	Polk	Low D.O.	1
2018	Cedar Creek	1344	P	10	31	Cedar	Unknown	1G
2018	Cedar Creek	1357	С	16.2	16.2	Cedar	Unknown	1G
2018	Cedar Creek	1344	P	10	31	Cedar	Low D.O.	1
2018	Cedar Creek	1357	С	16.2	16.2	Cedar	Low D.O.	1
2018	Clear Creek	1336	С	22.3	22.3	Vernon	Low D.O.	1
2018	Clear Creek	1333	P	28.2	28.2	Vernon/St. Clair	Low D.O.	1
2018	Fox Valley Lake	7008	L3	89	89	Clark	Phosphorus	1
2018	Grand Glaize Creek	2184	С	4	4	St. Louis	Low D.O.	1
2018	Grindstone Reservoir	7384	L1	173	173	DeKalb	Phosphorus	1
2018	Grindstone Reservoir	7384	L1	173	173	DeKalb	Nitrogen	1
2018	Grindstone Reservoir	7384	L1	173	173	DeKalb	Chlorophyll	1
2018	Harrison County Lake	7386	L1	280	280	Harrison	Phosphorus	1
2018	Harrison County Lake	7386	L1	280	280	Harrison	Chlorophyll	1
2018	Hazel Hill Lake	7387	L3	62	62	Johnson	Chlorophyll	1
2018	Horse Creek	1348	P	27.7	27.7	Cedar	Unknown	1G
2018	Horse Creek	1348	P	27.7	27.7	Cedar	Low D.O.	1
2018	Indian Creek	3256	P	5	30.8	Newton	Unknown	1
2018	Indian Creek	1747	С	3.6	3.6	St. Genevieve	Low D.O.	1

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2018	Kraut Run Lake	7056	L3	164	164	St. Charles	Phosphorus	1
2018	Kraut Run Lake	7056	L3	164	164	St. Charles	Chlorophyll	1
2018	La Belle Lake No. 2	7023	L1	98	98	Lewis	Phosphorus	1
2018	La Belle Lake No. 2	7023	L1	98	98	Lewis	Chlorophyll	1
2018	Lake Jacomo	7101	L3	998	998	Jackson	Chlorophyll	1
2018	Lake of the Ozarks, Niangua Arm	7205	L2	7600	59520	Camden	Phosphorus	1
2018	Lake of the Ozarks, Osage Arm	7205	L2	38920	59520	Camden	Nitrogen	1
2018	Lewistown Lake	7020	L1	29	29	Lewis	Atrazine	
2018	Little Drywood Creek	1326	С	15.6	15.6	Barton/Vernon	Low D.O.	1
2018	Little Drywood Creek	1325	P	20.5	20.5	Vernon	Low D.O.	1
2018	Middle Indian Creek	3262	С	3.5	3.5	Newton	Unknown	1
2018	Middle Indian Creek	3263	P	2.2	2.2	Newton	Unknown	1
2018	Nodaway River	279	P	59.3	59.3	Nodaway	Bacteria	2
2018	North Moreau Creek	942	P	11.6	47.9	Moniteau	Low D.O.	1
2018	Osage River	1031	P	10	81.9	Osage/Miller	Total Dissolved Gas	1
2018	Osage River	1293	P	45.5	45.5	Vernon/St. Clair	Low D.O.	*
2018	Petite Saline Creek	785	P	21	21	Cooper/Moniteau	Low D.O.	1
2018	Platte River	312	P	142.2	142.2	Worth/Platte	Bacteria	2
2018	Sadler Branch	3577	С	0.8	0.8	Polk	Low D.O.	1
2018	Stockton Branch	1361	С	1	3.6	Cedar	Low D.O.	1
2018	Todd Creek	316	С	5.7	9.9	Platte	Low D.O.	1
2018	Weatherby Lake	7071	L3	185	185	Platte	Nitrogen	1
2018	West Fork Drywood Creek	1317	С	8.1	8.1	Vernon	Low D.O.	1
2019	Forest Lake	7151	L1	580	580	Adair	Phosphorus	1
2019	Forest Lake	7151	L1	580	580	Adair	Nitrogen	1
2019	Forest Lake	7151	L1	580	580	Adair	Chlorophyll	1
2019	Hazel Creek Lake	7152	L1	453	453	Adair	Chlorophyll	1G
2019	Lake Springfield	7312	L3	293	293	Greene	Phosphorus	1

TMDL Scheduled	Water Body Name	WBID	Class	Impaired Segment Size	Classified Segment Size	County(ies)	Pollutant ¹	Impaired Uses ²
2019	Lake Springfield	7312	L3	293	293	Greene	Nitrogen	1
2019	Lake Springfield	7312	L3	293	293	Greene	Chlorophyll	1
2019	Lake Taneycomo	7314	L2	2118.6	2118.6	Taney	Nitrogen	1
2019	Lake Wappapello	7336	L2	8200	8200	Wayne	Phosphorus	1
2019	Lake Wappapello	7336	L2	8200	8200	Wayne	Nitrogen	1
2019	Lake Wappapello	7336	L2	8200	8200	Wayne	Chlorophyll	1
2019	Manito Lake	7198	L3	77	77	Moniteau	Phosphorus	1
2019	Manito Lake	7198	L3	77	77	Moniteau	Nitrogen	1
2019	Mark Twain Lake	7033	L2	18132	18132	Ralls	Nitrogen	1
2019	McDaniel Lake	7236	L1	218	218	Greene	Phosphorus	1
2019	McDaniel Lake	7236	L1	218	218	Greene	Chlorophyll	1
2019	Moberly Rothwell Lake	7165	L3	22	22	Randolph	Chlorophyll	1
2019	Monzingo Lake	7402	L1	898	898	Nodaway	Chlorophyll	1
2019	Nodaway Lake	7076	L3	73	73	Nodaway	Nitrogen	1
2020	Nodaway Lake	7076	L3	73	73	Nodaway	Chlorophyll	1
2020	North Lake	7218	L3	19	19	Cass	Phosphorus	1
2020	North Lake	7218	L3	19	19	Cass	Chlorophyll	1
2020	Odessa Lake	7093	L1	87	87	Lafayette	Nitrogen	1
2020	Odessa Lake	7093	L1	87	87	Lafayette	Chlorophyll	1
2020	Pomme de Terre Lake	7238	L2	7820	7820	Hickory	Nitrogen	1
2020	Pomme de Terre Lake	7238	L2	7820	7820	Hickory	Chlorophyll	1
2020	Stockton Lake	7235	L2	23680	23680	Cedar	Nitrogen	1
2020	Stockton Lake	7235	L2	23680	23680	Cedar	Chlorophyll	1
2020	Unionville Lake	7154	L3	74	74	Putnam	Phosphorus	1
PIL	Straight Fork	959	С	2.5	6	Morgan	Chloride	1

¹(S) = Sediment; (T) = Tissue; (W) = Water. ²Impaired Uses are those beneficial

uses, assigned to this water in state water quality standards, that are not being met due to water pollution.
Use codes for impaired uses are:
G= General Criteria, 1G = General criteria pertaining to protection of aquatic life, 1= Protection of aquatic life, 2 = Whole Body Contact Recreation (swimming), 3= Public Drinking Water Supply, 4 = Livestock and Wildlife Watering, 5= Secondary Contact Recreation (Fishing and Boating), 6= Irrigation, 7= Industrial Water